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CLINICAL MEDICINE AND SURGERY

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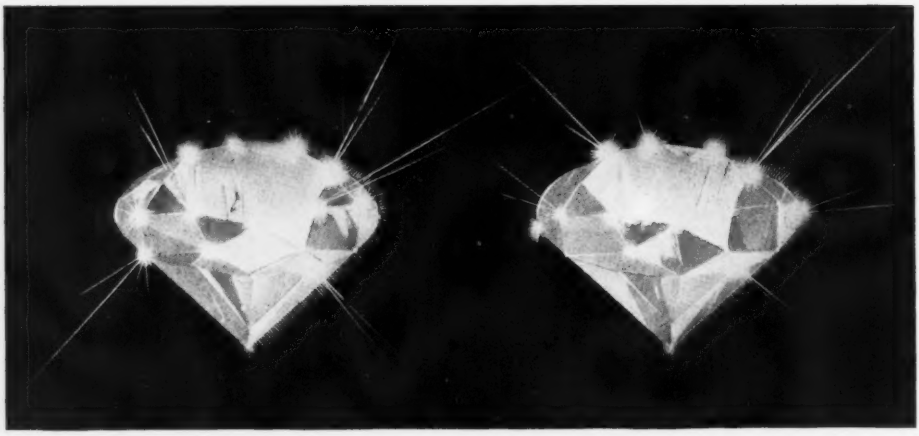

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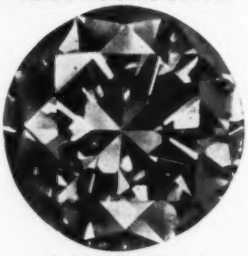

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VOLUME 44 MAY, 1937 NUMBER 5

EDITORIAL

Von Liebig

Founder of Laboratory Teaching in Chemistry

WE, of today, can scarcely imagine an institution of learning without extensive and well-equipped laboratories; and the idea of attempting to teach chemistry by purely didactic methods would appear quite ridiculous. And yet, the man who founded this indispensable method of instruction was born only 134 years ago (1803), in Darmstadt, Germany.

There is no available detailed record of the early years and schooling of Justus Freiherr von Liebig, but we do know that he was a pupil of Gay-Lussac, and that he was made professor of chemistry at the University of Giessen at an early age. It was there that he established, in 1826, the first teaching laboratory of chemical science which was ever a part of a university; and there, also, he did his epoch-making work on the physiologic chemistry of the carbon compounds, and on the cyanates, cyanides, amides, aldehydes, benzoyls, benzoates, organic acids, and chemical fertilizers of soils, which latter researches have earned for him the name, "Founder of Agricultural Chemistry," so that he deserves to be the patron saint of the increasingly important "Farm Chemurgic" movement. He also discovered the method of silver plating glass to produce mirrors, and a plan for making unfermented bread.

In 1852, his teaching activities were transferred to the University of Munich, but his researches went on.

In 1832, he founded Liebig's *Annalen*, which was the leading literary organ of chemistry during his lifetime, and was continued for a year after his death, in 1873. His book, "Organic Chemistry in Its Applications to Physiology and Pathology," was the first formal treatise on the subject and introduced the first scientific concept of metabolism, which now occupies so much of our attention, and propounded his theory that the readily oxidizable hydrocarbons are the source of animal heat.

His most important direct contributions to medicine were the discoveries of chloral and chloroform (1831); his method of estimating urea (1853); and his studies on fats, blood, bile, and meat juice ("Liebig's extract").

Liebig's investigations of fermentation and putrefaction were nullified by his purely chemical view of these processes, for although he was a thorough-going vitalist in other matters, for some reason he refused to accept the implications of Pasteur's discoveries (he even declined to look through a microscope) until they were forced upon him, and then did so rather ungraciously.

But in spite of this one evidence of rather serious mental strabismus, the modern world, and especially the medical profession, owes

an enormous debt to this energetic and enthusiastic German chemist, who had the constructive imagination to see the implications of matters which had, theretofore, been overlooked, and the vital force to carry his investigations to completion.

Knowledge is to know what to do; skill is knowing how to do it; virtue is doing it.—INDIAN PROVERB.

Kinesthesia and Learning

THE time is past when every child who does not measure up to the arbitrary academic standards of the grammar schools is therefore classified as a dunce, a nitwit, or a mental defective.

A decade or more ago, medical studies began to demonstrate that many of the children who were regularly failing in school were intellectually as keen as, or even keener than the average pupil, and that their apparent incapacity was due to defects in sight or hearing of such magnitude that they simply could not see or hear what was going on. When these defects were corrected, they went forward in their grades with a rush.

More recently, the much rarer cases of *word-blindness* are being recognized, at least in some cases, and special methods are being devised to deal with this handicap, which is by no means so easy to overcome as are simple deficiencies in sensual perception.

But with all these matters considered and attended to, there still remain pupils in the schools who, in spite of a demonstrably normal general mentality, are unable to cope with the requirements of the curriculum, and alert psychologists have been searching for other correctible defects to account for them, bearing in mind the fact that most of these failures are due to inability to read.

Dr. Grace Fernald, a Los Angeles psychologist, discovered, not long ago, that an astonishingly large number of mentally normal children (and probably, also, a good many adults) simply cannot learn to read easily, if at all, by means of the sense of sight, but can be taught to do so through a "sixth" sense—kinesthesia, or the muscle sense of position and motion, which was alluded to in these columns in the March, 1937, issue, on page 104.

The dramatic story of this discovery and some of its results was presented in a recent issue of *Today*, and abstracted in the *Reader's Digest* for November, 1936, on page 91.

This may appear to be an advance purely in the field of pedagogics, but such is not the case. Many, if not most, of the cases of "backward" children are, at some time or another, brought to the family physician for consideration and advice, and if medical men are unfamiliar with what is going on in the fields of psychology and education, they may deplorably fail the people who have every right to expect real and intelligent assistance when they turn to those who are, or should be, their natural advisers in all that pertains to their physical and mental wellbeing.

This does not mean that all physicians must be highly trained technical psychologists and psychiatrists (although those whose knowledge of the principles of psychology is deficient are unlikely to achieve any conspicuous success), but it does mean that every general clinician, at least, should keep himself posted as to what is going on in all fields which have to do with human welfare, so that he can tell his patients what the possibilities are, and direct them to those who can give them whatever specialized service may be required.

Difficulties exist only that, in overcoming them, we may grow strong.—ANNIE BESANT.

Getting Up Steam

WHEN heat is applied to water, no steam is produced until (at sea level) it reaches a temperature of 212° Fahrenheit. Two hundred degrees is not enough; nor is 210°; it takes the full 212° to make the machinery turn over. Who ever heard of an engine that would run on lukewarm water?

In connection with lukewarmness, it might not be a bad plan to reread what Saint John the Divine said about the Laodiceans, in his magnificent apocalyptic allegory, the Book of Revelation, in the sixteenth verse of the third chapter. It is a right pungent paragraph and will repay serious consideration.

In spite of the fact that every mentally normal person knows this basic fact by the time he has reached the fifth grade in school, there are still millions of people (including a good many physicians) who are trying to run their lives on warm water.

Perhaps the trouble with the Laodicean doctors is that they may have misunderstood their vocation. White-collar jobs have been popular for a number of years; the yearning for dignity has frequently overborne that for true serviceableness; and then, there is the popular misconception that all medical men work short hours, have a rather easy time of it, and enjoy large incomes. None of these is

an adequate motive for taking up the science and art of healing as a calling. Genuine enthusiasm for the work itself, in all its hard and exacting branches and with all its inevitable demands for self-sacrifice, is necessary to achieve any conspicuous success in the medical profession.

The word, enthusiasm, in itself, possesses illuminating connotations. It comes from the Greek *enthausiasmos* which, in turn, is derived from *en* (within) and *theos* (God), and means "inspired by God or the gods," implying an eagerness, coming from within (from the soul, if one please), so strong and so undeniable that it overrides all hindering circumstances and drives straight toward its goal. No hours are too long, no labor too hard or "menial," no personal sacrifice too great for the man of enthusiasm.

It has been wittily said that the man who is "down" on a thing is the one who is not "up" on it. Certainly no one can get any great "kick" out of any bodily or mental activity for which he is ill equipped and which he performs badly. We all enjoy doing the things which we do *well*.

So, then, it behooves all physicians (and all other people, for that matter) to take stock of themselves and find out whether or not they are Laodiceans, due to be "spewed out," and if so, why. Perhaps the divine inspiration is pulling them in some direction other than the one they are trying to follow, and should be given free scope by changing the vocation. More probably the trouble arises from insufficient knowledge and expertness in the work they are doing. In either case, something very definite and radical needs to be *done* about it.

If every physician would establish a clear-cut and unalterable determination to set aside a certain part of each day for planned study of the basic and practical aspects of his profession, and carry out such a program without faltering, such a head of steam would be generated, in each individual and in the profession at large, that nothing under heaven could stop him or it from arriving at the determined destination.

The worst bankrupt in the world is the man who has lost his enthusiasm.—H. W. Arnold.

The Vitamin B Complex

FOR some time it has been known that what is called vitamin B is not a simple substance. First recognized as the antineuritic vitamin (this factor is now designated as vitamin B_1), Goldberger discovered another factor which he believed would prevent pellagra. This is now known as vitamin B_2 or G.

Recent studies have made it practically certain that there are at least *six* factors in the vitamin B complex, all of which appear to be decidedly important in metabolism and nutrition, and to be present in whole grains, cereal germs, bran, nuts, many vegetables and fruits, egg yolk, milk (to a variable extent), and especially in yeast and those "vegetable meat extracts" which are made from it. The B_1 factor is the only one which, so far, has been isolated in a pure form, but that does not mean that the other factors have no place in clinical therapeutics.

Alert physicians will keep the possibility of a deficiency of the vitamin B complex in mind when treating obscure cases of gastro-intestinal disorders, malnutrition, anorexia, chronic wasting diseases, and especially vague pains which may be of neuritic origin. It should also be remembered in cases of deficient lactation and when patients are on low-carbohydrate or low-caloric diets.

While it is still impracticable to recognize hypovitaminosis of this type by specific, objective tests, a clinical test, by feeding yeast or yeast products, is easy to make and entirely harmless, and there is a good possibility that brilliant results, which will redound to the credit of the medical attendant, may be achieved in some difficult cases which have been a cause of distress and disappointment to both physicians and patients.

In the last resort, nothing is ridiculous except the fear of being so.—Henri Fauconnier.

Blood Pressure "Over the Counter"

COUNTER prescribing has come in for a good deal of unfavorable comment among medical men, and now it appears that we may have to deal with a type of instrumental "diagnosis" over the counter, unless the courts put a stop to it.

Last year (See *N. Y. State J. of M.* for Sept. 1, 1936), among the merry-go-rounds, bump-the-bumps, and hot-dog stands, at Coney Island and other amusement resorts, there appeared booths equipped with large-scale sphygmomanometers and (very conspicuously) some such legend as, "Read your own blood pressure—10 cents."

It is rather improbable that anyone except a person with advanced arteriosclerosis would burst a blood vessel on seeing the pointer pass the 200 mark, but there is a very real danger that many perfectly sound people, whose

blood pressure had been raised by the excitements and injudicious eating which are a feature of all amusement parks, might become sufficiently worried over a high reading that it would upset their equilibrium and bring on some nervous or other disorder.

This danger may be so remote that to thresh the matter out in the courts is a bit like going after a mosquito with a machine gun, but it emphasizes a point which calls for the serious consideration of all physicians.

Within the past few years, the general public has become conscious of and interested in its blood pressure, and wants to know about it. If the family physicians won't or don't tell people the facts, they will obtain the desired information from less reliable sources, and most of it is liable to be wrong.

Moreover, this special interest has called general attention to the simple and time-honored procedure of sphygmomanometry, and the doctor who does not practice it regularly, on practically every patient he sees, is in danger of being classified as a back number and of losing the confidence of his actual and prospective patients.

It therefore behooves all physicians who have not already done so to equip themselves with a reliable blood pressure apparatus, learn how to take accurate readings with it, and use it on every case; also to read up on blood pressure and its significance, so that they can discuss the subject intelligently and intelligibly with all enquirers. The street-fair booths will offer no attraction to the men or women whose family doctor has taken their blood pressure readings several times and has told them what it is all about.

It seems highly probable that one great reason why many physicians are not so prosperous as they would like to be is because they have an exaggerated idea of professional dignity and reticence, and have made no effort to sell themselves to their patients and the public in perfectly ethical ways, by demonstrating that they are abreast of the times and are equipped and competent to carry out all necessary diagnostic maneuvers, especially those that are particularly in the public consciousness.

A good sphygmomanometer, *consistently and expertly used*, might well prove to be one of the best investments its possessor ever made.

NEXT MONTH

Our June issue will be a Special Interns' Number, and will go to all the men who are completing their internships this year, as well as to our 12,000 regular subscribers.

Dr. Max S. Rohde, F.A.C.S., of New York City, will describe a method of pyretotherapy using conductive heat (which he calls "Pasteurizing the Blood"), and report his results with it in a variety of conditions.

Dr. Ralph Gorrell, of Clarion, Ia., will call attention to mistakes in diagnosis occurring because of failure to think, with interesting examples.

Dr. Frank B. Kirby, of North Chicago, Ill., will offer suggestions as to how physicians and pharmacists can cooperate, to their mutual advantage.

Francis Dickie, of British Columbia, Canada, who has spent much time in the National Library in Paris, France, studying the life of Ambroise Paré, will present the results of his research, illustrated with several rare pictures.

COMING SOON

"Symptoms of Diverticulitis," by Charles J. Drueck, M.D., F.A.C.S., Chicago, Ill.

"The Nature, Identification, and Treatment of Psychoallergy," by Wallace Marshall, M.D., University, Ala.

LEADING ARTICLES

Epilepsy and Hyperinsulinism

By Ellis Powell, M.D., West Monroe, La.

WHY does an epileptic have convulsions? Why is it necessary for the victim to become unconscious, cyanotic, rigid, and convulsed? Some say that it is a result of inheritance; others attribute it to an adherent prepuce. The "Release Theory," the "Short Circuit Theory," the "Irritation Theory," and the "Explosive Theory" have been advanced to explain it, but epilepsy, like time, marches on.

I have no new theory nor remedy to offer. I only present and discuss questions that frequently occur in the study of epilepsy. Foremost of these is: Could the convulsion be a result of some endocrine or chemical abnormality having become so marked that Nature is forced to employ the drastic and dramatic expedient of convulsions to correct it? If so, what endocrine or chemical change occurs as a result of the convulsion?

We will recall that muscular contractions cause the production of lactic acid, in only very small amounts, if a normal supply of oxygen is available, but in very large amounts if the oxygen supply is reduced. In the epileptic, with the deficient oxygen supply, the cyanosis, the marked muscular rigidity followed by violent contractions, one would find the perfect mechanism whereby large quantities of lactic acid would be produced. We recall that many of us were taught that this acid was a waste product and was eliminated as such, but it does not seem probable that Nature would resort to convulsions only to produce waste matter.

There are those who say that this acid is *not* waste matter, but instead is "the only substance which is oxidized in the brain; the only two substances required by the brain for its nutrition or fuel being lactic acid and oxygen[1]." So now this acid takes on added significance and "extensive experimental work, mentioned here only briefly, has firmly established the fact that our time-worn theory of lactic acid as a waste product of metabolism is fundamentally wrong. Lactic acid, according to the immense store of scientific material which has accumulated, is an important biological factor in the physiology of the organism and in its vitality.[2]" The important rôle that it plays has been set forth by Embden,[3] who says: "The route of the carbohydrate catabolism in the economy is by way of the lactic acid; and in the acid the greater part of the chemical energy which was in the glucose is still present." In this connection Himwich and Nahum[1] say: "The blood sugar is the precursor of the lactic acid, which is probably the sole fuel of the living brain."

How, then, is "the fuel of the brain" produced and maintained? Cori[4] says: "Muscle glycogen can be converted to liver glycogen by way of the blood lactic acid, and thus becomes available as blood sugar. Since the blood sugar is convertible to muscle glycogen, the glucose molecule is capable of a complete cycle in the animal body. It can be, in turn,

↑ → → Blood glucose → → ↓
Liver glycogen — Muscle glycogen
↑ ← ← Blood lactic acid ← ← ↓

Von Furth[3] also says that the glucose-lactic acid cycle is a reversible one, thus: glucose←→lactic acid←→racemic acid. In either instance, it is evident that lactic acid ($C_3H_6O_3$) is a product of glucose (dextrose) ($C_6H_{12}O_6$) metabolism, and that dextrose may be split into lactic acid, and lactic acid, in turn, may be converted into dextrose, in an unending cycle.

But if this normal chemistry becomes abnormal, so that there is too little sugar available, or if the dextrose is not broken down into the acid, the cycle is broken and the fuel of the brain is then in peril. When this cycle is broken, it may be repaired, logically, by repairing, insofar as is possible, the various regulatory mechanisms involved. Perhaps it should be mentioned that an enzyme (glyoxylases) activity plays a part in the glucose-lactic acid cycle. It is interesting to know that their activity is also reversible, being able to convert dextrose to lactic acid, and the acid back to dextrose, as the occasion demands, and it becomes evident that their scarcity will break the cycle.

The most important regulatory mechanism, however, is that which regulates the blood sugar level.[4] "This depends on the relative rate at which sugar enters and leaves the blood stream. Maintenance of a constant blood-sugar concentration requires an in and out flow of equal magnitude. When this equilibrium is disturbed, the blood sugar may either rise or fall, depending on the prepond-

erance of the processes which contribute or which cause a withdrawal of sugar from the blood. Since the blood sugar remains, normally, in the neighborhood of 0.1 percent (100 milligrams per 100 cc. of blood), there must exist a regulatory mechanism which is set in motion whenever the blood sugar ranges much above or below this figure. It is now generally accepted that a rise in blood sugar elicits a secretion of insulin, and that a fall in blood sugar below a certain level is followed by a discharge of adrenalin. The mechanism of blood-sugar regulation is, therefore, intimately connected with the action of these two hormones on blood-sugar production and utilization. Deficient adrenal activity or excess of pancreatic function will cause the blood sugar to become subnormal" . . . and thus again cause the fuel of the brain to be in peril.

It is now known that more people have an overactive pancreas than is generally supposed. These individuals have low blood-sugar concentrations as a result of the excessive output of insulin; in fact, it has been estimated that one-sixth of the entire population has a tendency to, if not actually, a low percentage of sugar in the blood. The low sugar concentrations in the blood interfere with the cycle necessary to provide the brain with its fuel — its nutrition — and therefore this study will be limited to this particular condition in epilepsy.

Blood Sugar Low in Epileptics

The sugar tolerance curves of two epileptics are presented for study. Bear in mind that these lines represent the various sugar concentrations available at various hours; in other words it is a measure of the "precursor of lactic acid" and, indirectly, of the fuel available for the brain to function with and to be nourished upon. Observe that the concentrations vary in the individuals, and in the individual they vary hourly, and in reality oftener.

It is well to remember that all manner of variations, in degree and in time, may occur. There are those whose sugar concentrations are lowest, remaining rather close to 50 or 60 mg. at all times and denoting a most marked hypoglycemia. There are those who go to the low levels in several hours after the "sugar test" or after the eating of a meal. There are those whose sugar levels remain near the normal during the day, when they eat rather regularly, but who "run down" during the night and perhaps have "nocturnal epilepsy." There are those who remain normal at practically all times, and whose blood sugar is only occasionally precipitated to the lower levels by some gross dietary error, the onset of menses ("menstrual epilepsy"), or some other detrimental factor.

In graphs 1 and 2 (Fig. 1), it will be readily observed that each curve is decidedly

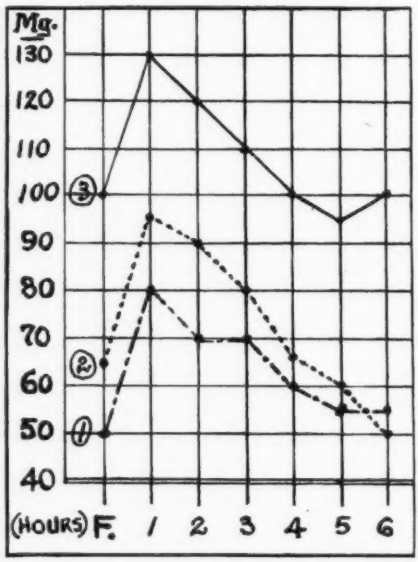

Fig. 1:—Dextrose tolerance curves of patients mentioned in the text (1 and 2), with a normal curve (3) for comparison. F, indicates the fasting blood-sugar level, and the figures on the base line the hours at which tests were made, after administration of dextrose. The line at 40 mg. indicates the level at which convulsions occur. All readings are expressed in milligrammes per 100 cc. of blood.

subnormal—that there is a marked scarcity of blood sugar, resulting from an excess of insulin secreted by an overactive pancreas. This condition is frequently referred to as hyperinsulinism. When compared with a normal sugar curve (3), it will be readily observed that the brains of patients Nos. 1 and 2 have a subnormal sugar or fuel supply, so that the nutrition is below par, and we may expect the function to be somewhat impaired. Since the fuel scarcity is more marked in patient No. 1, we would expect a greater upset in this patient (more mental subnormality; more convulsions) than exists with patient No. 2.

It is well known that, ordinarily, coma and convulsions occur when the fuel supply becomes sufficiently scarce (around 40 mg.) and those whose blood sugar concentrations more constantly approach this low point will be more impaired mentally and more convulsive. In other words, the lower the sugar levels go, the more nearly the "convulsive level" is approached, until the marked cases remain only a few milligrams above the convulsive level and a state of cerebral malnutrition exists, mental degeneration results, and frequent convulsions occur.

Cause and Effect of the Convulsion

I believe that the regulatory mechanisms of these individuals become disturbed, most commonly, in the following manner: The overactive pancreas has subdued the adrenals, or

at least caused them to function inadequately —there is insufficient adrenal secretion to adjust the situation; that is, to control the pancreas and its excessive output of insulin. This insulin output, at times, becomes so marked as to burn the sugar concentrations to the convulsive level, and then the insulin-adrenalin regulation has failed, and the fuel of the brain has become so low that the mental lamp is extinguished and unconsciousness exists.

Nature must now do something drastic to restore fuel to the brain—supply the convulsions, and thus produce the lactic acid, which then refuels the brain and permits consciousness to slowly return. Much of the acid is then converted into dextrose, and can readily be observed by making blood-sugar tests at short intervals following the convulsion, when the sugar level will be found to climb slowly upwards to its former concentration. Thus the dextrose-lactic acid cycle is repaired. Thus, when the endocrine regulatory mechanism fails to provide fuel for the brain, Nature resorts directly to chemistry for its supply.

By remembering that we are discussing the fuel of the brain, which permits it to function properly, and the nutrition of the brain, which permits it to grow and develop properly, we should not be surprised at the subnormal mental function; at the lack of mental development; at the mental degeneration that occur in those people whose fuel supply is so scarce. The brain was designed to grow, develop, and function normally on approximately 100 mg. of blood sugar per 100 cc. of blood, and it cannot be normal when only 50 or 60 mg. are available. One should not be surprised that, sooner or later, this condition will cause symptoms, varying from drowsiness to narcolepsy; from vertigo to epilepsy; from mental deficiency to mental degeneration.

In a major attack of epilepsy, when the fuel supply is exhausted, unconsciousness appears —the cortex of the brain completely ceases to function, there is no conscious control, and the lower neuronic levels pour down an ungoverned stream of tonic postural impulses. In fact, an abrupt rigidity, of the decerebrate type, exists because there is no fuel to permit cerebral function. Kennedy[5] has stated: "Many diverse causative conditions must operate through a common mechanism to produce so constant a result, and the differences in the nervous manifestations of epilepsy, from the major seizure through the petit mal, to migraine, to recurrent syncope and periodic, endogenous emotional tempests, comprise nothing less than a qualitative and quantitative unity. And in this gamut, I should include, without equivocation, the voluminous mental states of unreality and those prolonged and terrifying experiences known as vaso-vagal attacks." Is it not possible that the "common mechanism" and the "qualitative and quantitative unity," referred to by Kennedy, may be the fuel of the brain and its variations?

With this thought in mind, I will quote liberally from Dr. James Collier's Lumelian lectures of 1928[5].

"There is, in reality, no difference whatsoever between the clinical manifestations of epilepsy, resulting from organic disease of the nervous system, and those of idiopathic epilepsy... I shall attempt the argument that the clinical phenomena met with in idiopathic epilepsy, in epilepsy from local lesions of the brain, and in the symptomatic epilepsies occurring in disordered metabolic states in general diseases and intoxications, are identical and are truly indistinguishable; that those occurring in narcolepsy, migraine, vaso-vagal attacks, idiopathic syncopal attacks, and perhaps also in tetany, are phenomena of the same order and are closely allied with those of epilepsy, with which they occasionally mix; that there is one pathologic factor which is common to all these conditions, and this is hypothesised as a metabolic dyscrasia, the nature of which is not always quite the same and therefore different clinical syndromes occur, in which the prognosis varies . . . So far as the socalled idiopathic epilepsy which thus affects man and animals is concerned, no pathologic changes have been found upon which any hypothesis as to the nature of epilepsy can be built up. The findings have been for the most part frankly negative, or such changes as have been found in severe and long-standing cases may be reasonably attributed to long-standing disorders of function. Attention has, therefore, turned to the possibility of finding an explanation of epilepsy in some perversion of the chemistry of life."

Probably, as Collier says, there is one pathologic factor—some perversion of the chemistry of life—that is common to many mental and nervous disorders, epilepsy included. This common factor, logically, is some disturbance in the fuel supply of the brain.

I am aware that a variety of conditions other than those here discussed are capable of releasing the convulsive mechanism—of causing epilepsy. For example, there are external poisons with corresponding anatomic changes; there is syphilitic epilepsy, dependent on an obliterative endarteritis of the cortical vessels; there is arteriosclerosis, dependent on the sclerotic changes in the cortex; there is encephalitis, and those cases resulting from the inhibition of the growth of the brain, which perhaps may be a result of a disturbed food or fuel supply. These commonly suggested causes of epilepsy show that some anatomic abnormality prevents or interferes with the delivery of the fuel supply to the cortex of the brain, and it becomes evident that the fuel must not only be manufactured, but must also be delivered to the

cortex, if normal conditions are to be maintained.

I believe that hyperinsulinism plays the greater part in producing mental abnormalities, because it destroys the blood sugar—the "precursor of lactic acid," and thus the "fuel of the brain." I think that Seale Harris[6] became a benefactor to mankind when he observed and described hyperinsulinism. His was the first observation of the most common factor that destroys the glucose-lactic acid cycle, and thus causes a "perversion of the chemistry of life," and specifically of the brain. His findings are of fundamental importance in advancing the study of the nutrition of the brain and help to solve many of the problems connected therewith. Their potential possibilities appear practically unlimited.

It has been said that insulin controls the fuel of life. We frequently see individuals in whom it has unquestionably destroyed the fuel of the brain and has produced almost any symptom that psychiatry describes.

I have found that measures designed to maintain the blood-sugar levels at normal, whether it be by frequent feedings, the ketogenic diet, the endocrine preparations, or whatnot, are more beneficial in the treatment of epilepsy than luminal and bromides, and I believe that measures designed to restore the fuel, the nutrition, to normal are more scientific, more physiologic, and more sensible than supplying a hungry brain with medicine.

Every epileptic—in fact, every mental and nervous patient—should be given the benefit of any doubt by investigating the fuel supply of the brain. A simple blood-sugar study will solve many problems and will indicate the correct treatment for many mal-functioning brains.

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6.—Harris, Seale: Hyperinsulinism and Dysinsulinism. *J. A. M. A.*, Sept. 6, 1924.

The Surgical Correction of Enlarged Breasts

By Clifford F. Dowkontt, M.D., New York City

THAT plastic surgery of the breasts has been far more widely practiced in Europe than on this continent cannot be explained by any wide divergence in the incidence of this condition here and abroad.

This becomes apparent when one examines the more common causes of prolapse and enlargement of the breasts. Chief among these is the baneful practice among many young girls of binding the breasts downward tightly to the chest, thus avoiding the evidence of approaching maturity. The embarrassment they suffer in such matters would probably astonish the French or German girls. Some years ago, morever, the American girl considered the "boyish-form" the ideal figure, and this contrasts with the rounded bust so highly esteemed abroad.

At any rate it cannot be denied that many women in this country are both physically and psychically handicapped by cumbersome and unsightly enlargement of the breasts, and are quite willing to undergo an operation to restore them to their normal size, position, and contour. Granted that this work should be done only by a surgeon who is well equipped, by training and experience, it would seem to be not beyond the ethics of the profession to fully recognize the value of plastic surgery in this field. A mass of excess tissue, of and by itself, would certainly be considered worthy of surgical attention, and the fact that an operation of this sort can be performed on the breasts in such a way as to produce excellent cosmetic results, should not in the least detract from its worthiness.

The breasts, constituting as they do a prominent secondary sexual characteristic, occupy a place of considerable importance in a woman's ego. The psychic reaction of a patient to a complete mastectomy is, of course, familiar to all and is a case in point. So too is the psychic uplift which follows a successful breast correction, as well as the reverse change when such operation is performed without due regard for the cosmetic factor.

In 1929[1] I described an original technic and called attention to the fact that the resulting scar, completely encircling the breast, was an objectionable feature. In 1931[2] a modified technic was described, which was an improvement, in that no scar was left above the level of the nipple. Both of these methods had the disadvantage that, in cases of marked prolapse and hypertrophy, a two-stage operation was necessary.

Since that time still further modification

1.—Dowkontt, Clifford F.: An Operation for Pendulous Breasts. *M. J. & Rec.*, Dec., 1929.

2.—Dowkontt, Clifford F.: A Modification of the Double-Circle Operation for Pendulous Breasts. *N. Y. St. J. of M.*, Mar, 3, 1931.

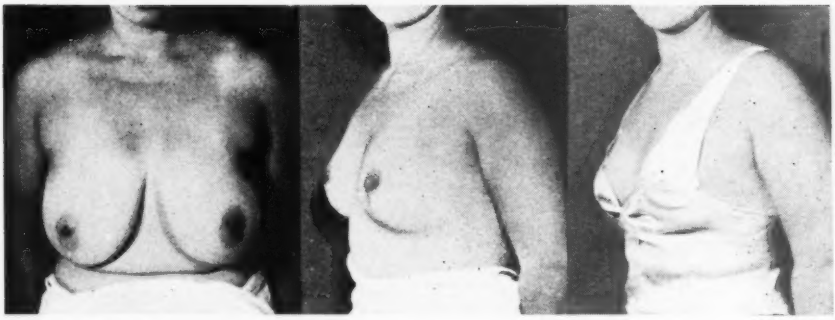

Fig. 1:—(Left) A moderate degree of prolapse and hypertrophy of the breasts; (center) the same patient, one month after a plastic reconstruction; (right) photograph taken after operation, to show the extremely low-cut garments which may be worn without exposing the scar.

has enhanced the value of the operation, so that, as now performed, both of the previously mentioned objections have been overcome. Cases in which the excess tissue removed amounted to as much as six pounds have been completely corrected at one operation, and the resultant scar has been limited in extent to the border of the areola and a short line extending vertically downward to the mammary sulcus. This scar heals very favorably and, because of its limited extent, does not interfere in any way with the wearing of the very lowest-cut gowns or costumes after the correction has been performed.

Prior to operation, the area of the breasts and axillae is cleansed with sterile soap and alcohol and a temporary dressing is applied. The patient is then given the appropriate amount of Avertin, by rectum, and, some twenty minutes later, removed to the operating room, where ether anesthesia is administered. The basal anesthesia aids greatly in two ways: First, it reduces the psychic shock of the preoperative period, and second, it greatly lessens the amount of ether necessary. The fact that the operation requires approximately an hour and a half would ordinarily presuppose a prolonged and distressing recovery from the anesthesia; but with the preliminary administration of Avertin, patients react very quickly and have little postoperative discomfort.

The usual iodine preparation is used, and the operation is begun by reflecting the skin from the mammary gland except for the nipple and areola, which remain in place. A wedge-shaped mass of glandular tissue is then excised, leaving a normal amount of breast tissue, with the milk ducts and nipple intact. The ability to judge accurately the amount of material to be excised depends on experience and great care must necessarily be used in this procedure so that an adequate blood and lymph supply is maintained. The free surfaces are then sutured to each other, resulting in a breast of normal size and contour. The mass is then suspended by chromic gut sutures to the pectoral fascia, and the superfluous skin excised at the new areolar border and the vertical line between it and the lower fold of the breast.

The silk sutures in the skin are removed in from eight to ten days. Hospitalization is generally necessary for only two days, and it has been found possible to allow a patient who has come from a distance to return home to the care of her own physician within three days of operation.

More than almost any other procedures in the realm of reconstructive surgery, breast-plastic operations require an abundance of training and experience on the part of the operator. Women expect a result which is cosmetically excellent, and are naturally disappointed when such is not the case. Therefore, unless a surgeon is willing to devote much of his time and attention to this specialty, it would be wiser for him to refer these cases to one who does specialize in this particular field.

As time goes on, corrective surgery of the breasts will undoubtedly become more widely used in this country, and there is ample reason to believe that the cosmetic quality of the results will be fully as good as those obtained abroad.

31 East 60th St.

BLIND FOLLOWING OF AUTHORITY

The greatest difficulty that teachers have to contend with is the ordinary unwillingness of men to think for themselves and their proneness to follow, blindly and irrationally, one or another anonymous authority or an authority altogether lacking the requisite credentials.—U. B. Papers.

Bichloracetic Acid in Skin Lesions

By Gerald A. Rau, M.D., Two Rivers, Wis.

IN the past four years, I have treated more than 3,000 superficial skin lesions with bichloracetic acid. The method of applying the acid in treating such skin lesions was described in April 1935[1], and but few modifications in technic have been made since that article was published. The purpose of this report is, however, to describe again the general technic of bichloracetic therapy, and to apprise clinicians of the further extension of such therapy to types of skin lesions which had not been considered within its scope as a therapeutic agent at the time of publication of the first report.

In 1919, Professor Louis Kahlenberg, of the Department of Chemistry of the University of Wisconsin, called to the attention of Dr. Edward H. Ochsner, of Chicago, the fact that bichloracetic acid dissolves keratin, the chief constituent of corns, warts, and calluses. However, it was not until May 18, 1932, after he had used the acid for thirteen years, that Dr. Ochsner read, before the surgical section of the Illinois State Medical Society, at Springfield, Ill., his article on "The Use of Bichloracetic Acid in Surgery"[2]. To Dr. Ochsner belongs the credit for the first clinical use of this chemical.

Pure bichloracetic acid is a clear, colorless liquid at ordinary room temperature. Practically, the acid has little use outside of medicine. In fact, it was regarded by chemists as being interesting chiefly as a chemical curiosity. But it has, as one of its chemical properties, the faculty of destroying keratin, and this keratolytic property makes it invaluable in the treatment of corns, warts, calluses, and other superficial skin lesions. Further, to its effectiveness is added ease of control. While the acid will destroy normal skin tissue, its action is very readily confined to the pathologic skin area, since it may be applied in small amounts, and since the area treated turns color (grey-white to white) as soon as the acid acts upon the tissue. Bichloracetic acid must not be confused with either trichloracetic acid or glacial acetic acid. It differs from both of these acids in its chemical constitution, its physical properties, and in its specific chemical effects upon tissues. While both trichloracetic acid and glacial acetic acid are used in medical practice, they will not produce the same results as will be obtained by using bichloracetic acid.

In Dr. Ochsner's article the following technic is advised:

1.—Apply vaseline, using a camel's hair brush, around the corn, callus or wart, to prevent the bichloracetic acid from coming into contact with normal skin.

2.—With a glass rod, apply a little of the acid to the lesion. After this has been absorbed, apply a little more.

I never used this method. Rather, in place of the glass rod, an applicator stick is used to apply the acid. The stick is sharpened to a point, and the amount retained on it can be regulated by letting the excess amount run down the side of the bottle. Further, the wood absorbs some of the excess acid, and, in addition, the amount of acid applied in treatment can be further regulated by varying the angle at which the stick is held. Since this variation was introduced into the technic, Dr. Ochsner has adopted it, and has verbally approved and recommended it.

The acid has a tendency to spread over the skin area around the lesion, however, and, despite all one's caution, one may at times get too much acid on the skin and cause a chemical burn. The use of vaseline, while not indispensable, constitutes an additional safeguard.

Bichloracetic acid will generally cause more scar tissue formation in persons with a delicate skin; and young persons will usually form more scar tissue than will older patients. Individuals of the "keloid type" may form keloid after the use of bichloracetic acid, just as they may after the use of the knife or of any escharotic chemical. In all of the cases which I have treated, a keloid occurred in only one instance.

The practitioner will be able, after treating a number of lesions, to judge the amount of bichloracetic acid needed to treat any particular case. To gauge the interval between treatments is simple—one is always safe in allowing from five to seven days to elapse between treatments. Warts, corns, and calluses require heavy applications. Other lesions, of slight density, such as moles, xanthelasma, and angiomas, are best treated by very light applications of the acid. If necessary, a second application may be used on such lesions, but it is safer, before using a second application, to wait until the crust following the first has dropped off, and until there is at least a thin layer of normal epidermis over the lesion. Light applications are usually to be preferred in cases where the cosmetic result is an important consideration, since they ensure greater freedom from the danger of scarring. I recommend the immediate, liberal use of water should any acid be dropped on normal skin.

I shall present descriptions of some typical

1.—Rau, Gerald A.: Treatment of Superficial Skin Lesions with Bichloracetic Acid. CLIN. MED. & SURG., Apr., 1935.

2.—Ochsner, Edward H.: *Illinois M. J.*, Aug., 1932.

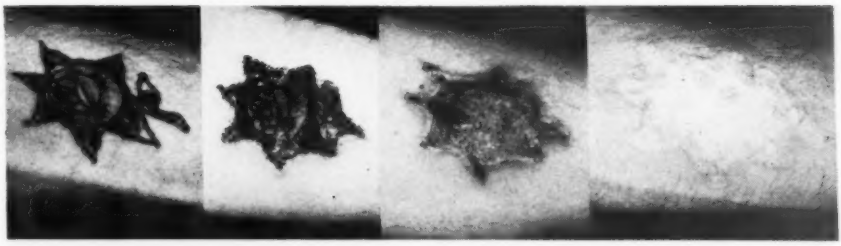

Fig. 1:—Tattoo, showing stages in removal, left to right. (Left, original appearance; right, final scar).

lesions, to cure which bichloracetic acid was used. In presenting these case reports, I would stress these facts: (1) They represent a variety such as will be seen in any general practice; (2) they are "picked" only in the sense that they were photographed and followed with a view of providing visual proof of satisfactory results; (3) the technic and the intervals between treatments are, in every detail, the same as those given every other similar lesion, and, therefore; (4) the cases presented afford a practical study of the technic of treatment of the various lesions which can be successfully treated by bichloracetic acid.

In presenting a study of this type, it is obvious that not all the photographs can be shown in the article, hence I present these as case histories, and offer as many photographs as it is practicable to print.

Tattoo

Mr. E. O., seen in August, 1932, had one tattoo design on each forearm (see Fig. 1). I explained to him that a tattoo had never, to my knowledge, been removed by bichloracetic acid, but that I felt—knowing the action of the acid and the pathology involved—that a scar such as would result would be preferable to the tattoo. He consented to the procedure of removal and a single application of bichloracetic acid was made on the right forearm. The patient complained of no discomfort, except a slight burning which lasted about an hour. He was seen at weekly intervals, and two weeks after the application of acid the treated area sloughed. At this time only did it become necessary to use a dressing; scarlet red ointment was applied to the raw area and continued for three weeks, when it was found that the single application of acid had failed to remove all the pigment in the tissues. The skin was allowed to grow over the area, and, the following summer, the patient sun-tanned his arm until the scar was nearly the same color as the normal skin. There is no hair on the scar, since the hair follicles, lying superficial to the tattoo, were destroyed.

The patient was well satisfied with the result, and in November, 1934, returned for the removal of the tattoo on his left forearm. On November 20, a single application of bichloracetic acid was used, care being taken to get the acid well beyond the borders of the mark (about 5 mm.), since it seems to be the tendency of the tattoo "artist" to deposit an unusually large amount of pigment in the borders of the design. This may be an unconscious or an intentional effort to render the design clearer, by stressing the outline of the figure.

On December 4, 1934, the slough was nearly ready to separate, and small fissures appeared in the crust; through these fissures seeped a moderately thick, serous discharge. The patient used a dressing, and on December 6 the slough came away with the dressing. The pigment was nearly all removed (I estimated that about 98 percent of the pigment originally present had come away with the slough). That which remained was confined chiefly to the borders, and to an area where solid "fill-in" color work had been done.

On December 14, 1934, it was obvious that the skin "islands" and the proliferating edge were covering the remaining pigment, and a blunt bistoury was used to trim away these skin areas. After this, a second application of bichloracetic acid was used on the areas in which pigment remained.

There was an annoying discharge from the granulations in the wound, and the patient was given a dusting powder of 10-percent aluminum subsalicylate. He was instructed to use it freely enough to form a coagulum over the wound, and no dressing was necessary.

Four weeks after the second application of bichloracetic acid, the entire area was covered with new epidermis. The skin is normal in texture and is gradually becoming darker, so that I expect it to become, in time, the same color as the rest of the skin. The hair follicles, of course, were destroyed.

Xanthelasma

Mr. S. G., seen on October 8, 1935, had three very pronounced lesions on the eye lids—one on the left lower lid and one on each upper lid (see Fig. 2). These lesions were treated with one application of bichloracetic acid. The intense smarting, usually felt when the acid is applied to the skin of

Fig. 2:—Xanthelasma. Above, before treatment; below, after treatment.

the eyelid, lasted a short time, but beyond this the patient was not inconvenienced.

He did not return until November 15, 1935—thirty-eight days later. The areas treated had sloughed and healed, but the xanthelasma was still present. The lesions, however, were reduced in each case to about one-half of the original area.

Another application of the acid was used, and on January 3, 1936, the patient returned for a check-up. The lesion on the lower left lid was hardly visible, the other two lesions were barely visible, the color was rapidly returning to normal, and the yellowish, fatty appearance of the lesion was entirely gone.

Senile Keratosis

Mr. A. K. had two lesions of senile keratosis, a mole near the outer canthus of the left eye, and a pigmented mole on the left ear.

These lesions were treated on October 29, 1935, and the slough separated from each lesion in about two weeks. Fifty-five days later (December 22, 1935), there was hardly a visible scar.

Moles

Miss E. G. had a large, hairy mole on the chin. She had a tendency to form keloid—a surgeon had previously removed a mole, and a keloid resulted, the result being as objectionable as the mole had been.

To avoid the formation of keloid, the bichloracetic acid was applied, very lightly, on September 16. Four days later (September 20), the slough separated, and a check-up on October 22 showed that the mole was entirely destroyed. The acid had, however, failed to remove the hair follicles, but all pigmented tissue was gone. The hairs must be removed by plucking.

It is demonstrated here that a light application of bichloracetic acid may be sufficient to destroy a pathologic structure, yet insufficient to eradicate a normal structure like a hair follicle, undesirable as the latter may be on the face in some cases.

Warts

Mr. S. K., a fisherman, was seen on September 24, 1935. On the knuckle of the fourth digit, right hand, he had an enormous wart, which was stained a deep brown by the iodine with which the patient had sought vainly to destroy it (see Fig. 3).

Fig. 3:—Bifid Wart. Above, before treatment; below, after treatment.

The wart itself is worthy of mention. It was, as stated, enormous; but it was divided into two parts, and additional lobulation was noted on each of the main divisions. The base of the growth was about 2 cm. in diameter, and the height about 1 cm.

There are, perhaps, three explanations for the lobulation observed in warts. I have treated many warts, including a number—perhaps 25—of these lobulated lesions, which have never, in my experience, been seen in anyone but a commercial fisherman, from which fact these explanations have occurred to me: (1) That there is a virus, possibly related to some fish fungus, which is capable of producing this peculiar lesion; (2) that the frequent tearing off of the wart, either intentionally or by catching on nets and boxes, may cause the lobulation; (3) that the trauma

Fig. 4:—Corns. Above, before treatment; below, after treatment.

to the lesion, incurred in such strenuous manual labor as commercial fishing, may cause these lesions to crack, and the parts caused by this division to hypertrophy individually, as would any other low-grade granuloma.

This wart was given one application of bichloracetic acid on September 24, and fell off three days later. On October 1, much of the root remained, and a second application of the acid was made. Seven weeks later (November 15), hardly a scar remained.

Corns and Calluses

Mrs. L. M., seen on October 12, 1935, had extensive corns (see Fig. 4) and calluses on both feet. The lesions were pared with a sharp scalpel, laid almost flat upon the skin. After some of the horny tissue had been removed, one application of bichloracetic acid was made. One week later, the dead tissue was again pared away with the scalpel. It was not necessary, at that time, to treat the lesions further.

The patient had been wearing shoes ¾ inch shorter and ½ inch narrower than the foot. Proper shoes; *i.e.*, shoes large enough in all dimensions, were secured, and since that time the patient has had no recurrence of her foot complaints.

Until about one year ago, in my practice, one application of bichloracetic acid was made at the time of the patient's first visit. At the next visit the dead, horny tissue was pared off and a second application of acid was made. One application will usually relieve the pain due to pressure on the corn.

During the past year I have improved the technic. At the first visit the corn or callus is pared, and the remaining horny tissue is treated with bichloracetic acid. At the next visit, in the majority of cases, the entire remaining tissue of the lesion, whether corn or callus, is easily removed with a scalpel. Occasionally, calluses will require a second treatment, but, by paring the lesion first, the general run of corns or calluses can be removed with not more than two office calls.

It is essential, in caring for the feet, that the patient be carefully instructed to buy shoes that fit the feet. Shoes must be long enough to allow for the lengthening that occurs when the longitudinal arch is flattened. Constant pressure causes atrophy; intermittent pressure causes hypertrophy; and no matter how often corns or calluses are removed, they will return unless the proper shoe is worn.

Clinical Carcinoma

Mr. C. F., age 63, was seen on August 15, 1935. He had a small sore on the left cheek, which caused him no inconvenience, except that it was constantly chafed by the lower rim of his glasses. He had had three "blackheads," in a small group, two years previous to this time, and these were removed by squeezing. A short time later (he judged about two months), this sore appeared and slowly grew to its present size. The entire lesion was about 1 cm. in diameter, and consisted of an indurated area, raised to a thickness of about 1 mm. above the skin surface. Almost at the center of the indurated area (which was covered by epithelium) lay a raw, red surface, about 2 mm. in diameter. The patient stated that this lesion formed crust after crust. Each one, after either falling off or being knocked off, was soon followed by another. The edges of the smaller area were raised and very vascular. No crust was present at the time I saw him.

On August 15, 1935, a single, heavy application of bichloracetic acid was made. The entire indurated area was covered and the acid applied to the skin beyond the edges of the induration. The slough separated in two weeks. On September 15, 1935, thirty days after the acid was applied, the area had healed so well as to be almost unnoticeable. At present, it can not be detected when one stands a few feet from the patient.

Of course, no biopsy was performed. It was omitted for the usual reasons: that unless one excises widely, one does not entirely destroy the malignant growth, and wide excision renders it difficult to obtain a good cosmetic result. Further, I felt that bichloracetic acid would remove the growth as well as would surgery, x-rays, radium, or radon, although only the use of surgery would furnish microscopic proof that I had dealt with a malignant lesion. However, in the history and description of the lesion, one should have no difficulty in recognizing it as a basal-cell carcinoma, or "rodent ulcer." Inspection and palpation confirmed this diagnosis.

Dr. Edward H. Ochsner reported the successful use of bichloracetic acid in the treatment of x-ray carcinoma of both hands. This paper was printed in the May, 1935, issue of *The American Journal of Surgery*. The author states: "Bichloracetic acid is a solvent of keratin and not an oxidizing agent like nitric acid. It has a predilection for keratin, and hence there is not the same danger of its attacking the deeper layers of the skin, the healthy skin, or the subcutaneous tissues."

It is true that the ease of control of bichloracetic acid is due to: (1) the exactness with which the amount applied can be regulated; (2) the predilection of the acid for keratin. However, as stated elsewhere in this article, acid applied to normal skin will cause a "burn"—a chemical necrosis of the skin involved. It is obvious, then, that the use of bichloracetic acid is beneficial, but the abuse of the chemical must be avoided.

Birthmarks

R. V., an infant of eleven months, was seen in October, 1934. When the child was five months old, her parents noticed a red birthmark on the upper lip, just to the right of the midline. It was a hemangioma, about 2 mm. wide by 5 mm. long, lying at the junction of the skin and mucous membrane of the lip. A single application of bichloracetic acid was made. About three weeks later a reddish scar was all that remained. Six months later, this had bleached entirely, and an excellent cosmetic result was obtained. No photograph of this case was obtained, because the color of the lesion was not in marked contrast to that of the lip, in which most of the angioma lay. Eighteen months later, the scar was practically unnoticeable and the contour of the lip undisturbed.

Hypertrophied Nails

In these lesions, referred to as *onychogryphosis*, one finds the nail greatly thickened and deformed. The etiologic agent is frequently the fungus *epidermophyton*, although the nail of a hammer toe is usually also deformed in this manner.

In treating these lesions, it is best to place vaselined cotton around the edge of the nail, to protect the flesh from being burned by excess acid. Bichloracetic acid is then applied to the thickened area of the nail. About seven to nine days later, the nail is pared with a scalpel and another application of acid is made. In one of my cases, only one application of acid was necessary, while several cases needed three applications; but, in general, two applications will suffice to restore the nail to normal.

L. G., a woman who had had a thickened, discolored nail "for years and years," was examined in February, 1935. A typical case of onychogryphosis, this lesion was given an application of bichloracetic acid. One week later, the nail was pared longitudinally, away from the nail bed, the scalpel being laid nearly flat. After the typically brownish-black surface layer was removed, a dark-brown layer of the nail was seen. Through this, at intervals of about 1 mm., ran a yellow layer, about 0.5 mm. wide, from the distal end of the nail to its root. The brown part of the nail came away in flakes; the yellow part crumbled. But what was especially interesting was the presence of three hollow compartments, about 1 mm. in diameter, round, with flattened top and bottom—exactly like a medicinal tablet. Because one finds these empty compartments in the skin, after the disappearance of the blebs characteristic of fungus infection, it seems obvious that the hollow area in the nail substance must be due to the same causal agent as those in the skin; i. e., they are "pockets" in which the fungi multiply, and from which they are spread. In this case, since bichloracetic acid had been used, the fungi were destroyed, and neither culture nor microscopic examination showed a pathogenic microorganism. Three applications of acid were used, at intervals of seven days, and after two months the nail presented a normal color, shape, and thickness.

Soft Corns

This lesion, usually involving the web between the fourth and fifth toes, responds well to treatment with bichloracetic acid. One application is made at the time of the first visit, and about five days later, if the dead skin has not fallen off, it can be removed easily with tweezers. Usually a deep hole, with a whitened edge will be found at the site of the corn. The acid must be applied to the lining of this pit, and to the whitened skin on the surface around the hole. The patient must be instructed to procure properly-fitting shoes, and to prevent maceration of the skin of the web between the toes. This can be facilitated by using a dusting powder or a pad of cotton between the toes.

Although many soft corns are treated, in my practice, with bichloracetic acid, I have made no attempt to photograph any of the cases, since the lack of color contrast and the fact that lesions usually have depressed surfaces, make it impossible to demonstrate results in a photograph.

Pedicled Moles

Pedicled moles (also called warts) can be removed by one application of bichloracetic acid. The mole is grasped by forceps, and the pedicle stretched. The acid is applied to the pedicle and, in from two to five days, the tumor drops off without bleeding.

Mr. C. A. was seen in September, 1935. He complained of a "growth" on his back, which he had had as long as he could remember, but only recently the lesion had become irritated by friction, as his clothes rubbed it.

Examination revealed a very vascular, pedunculated mole, about 2 cm. in length and

about 1 cm. in diameter, attached to the skin of the back by a pedicle about 2 mm. in diameter. The distal end of the mole was grasped and the whole lesion stretched. Bichloracetic acid was then applied to the pedicle only, care being taken, however, to touch all the skin of the pedicle. In ten minutes the entire mole became greatly engorged, and the engorgement remained about twenty-four hours. Thereafter the mole began to shrink and to turn color, eventually becoming a black, shrunken lesion, which dropped off in seven days without bleeding, and an excellent cosmetic result was obtained.

Unusual Lesions

While the foregoing descriptions concern commonly-seen lesions, I wish to mention two unusual cases, the only ones seen in treating over 3,000 skin lesions with bichloracetic acid.

O. B., a sixteen-year-old boy, was seen in February, 1935. In May, 1934, his right foot was stepped on by a cow. Following this accident, a growth appeared on the third toe of the foot, beneath the nail, gradually lifting the nail and extending forward in a line drawn longitudinally through the toe. The lesion was then 1 cm. in length and 0.5 cm. in diameter, was cartilaginous, and suggested, in consistency and appearance, a neoplasm. Bichloracetic acid was used at three-day intervals for four weeks, the patient in the meantime continuing attendance at school. The result was excellent.

W. DeL., a child of three months, developed a growth on the top of the second toe of the right foot. It was 0.8 cm. in diameter, 0.4 cm. thick, and of a fibrous consistency. Four applications of bichloracetic acid, at seven-day intervals, destroyed the growth, and an excellent result was obtained.

I believe that the first of these growths (in the case of O.B.) was a lowgrade, infectious granuloma; the second (W. DeL.) a fibroma. Biopsy was obviously not practicable.

Plantar Warts

I should like to caution practitioners against the danger of confusing plantar wart (plantar verruca) with callus. Frequently one treats a lesion which seems to be a callus, and finds, after paring the tissue destroyed by the first application, that beneath the superficial tissue there is a plantar wart. It is frequently very deep, and often, the lesion being entirely covered by what appears to be a callus, the practitioner does not recognize it as plantar wart. The wart will be permanently destroyed by three or four applications of bichloracetic acid, at three- to seven-day intervals, while a callus can generally be removed by one or two applications of acid.

This article describes some of the most common skin lesions seen in general practice, which respond well to treatment with bichloracetic acid. It is necessary, in treating cases in which the lesion is on the face, arm, or hand, to warn the patient that there may be a scar resulting from the treatment. Usually, the patient will prefer the scar to the lesion.

The bichloracetic acid used in all of my cases was obtained from The Kahlenberg Laboratories, Inc., Two Rivers, Wis.

MENTAL EROSION

Every human being is endowed with a limited and infinitely precious stock of attention-power; and life today is such that—unless the individual is singularly obstinate and cunning—this power of the mind may easily be dissipated or conventionalized by endless competitive demands. By newspapers, by electric lights, by telephone, by radio, by moving pictures, by airplane and motorcar and church and school and State, by a thousand appeals, admonitions, and interruptions, the mind is assailed and distracted. We hear a good deal about the agricultural problem of soil erosion: hillsides denuded of fertile topsoil by the actions of streams, or great regions of Middle Western richness scoured off by dust storms. Surely not less serious is the matter of mind erosion: the dust storms of daily excitement and of continual triviality can easily blow away the sensitive topsoil of the spirit. CHRISTOPHER MORLEY, *Streamlines.*

COMMUNISTIC PROPAGANDA

I have never feared lest communists gain control of America. But I confess some concern over the spirit of communist propaganda. It tends to divide people into factions, drive them to extremes, force sensible men to take sides on issues which are at best half true, and cause the community to lose its judgment.—EVERETT D. MARTIN, in The Forum.

ADVERSITY

Adversity is a medicine which people are rather fond of recommending indiscriminately as a panacea for their neighbors. Like other medicines, it agrees only with certain constitutions. There are nerves which it braces, and nerves which it utterly shatters.—JUSTIN MCCARTHY.

The Modern Proctologic Examination

By David Maeth, M.D., New York City

NEVER in the annals of the medical profession has there been more stress laid upon the importance of the periodic health examination than today. This form of examination is forcibly brought to the fore by the insurance companies, the cancer-control organizations, the medical societies, the professional and lay press, the radio, the general practitioner, and the specialist. It may well be summed up in the ancient proverb regarding the ounce of prevention.

Fig. 1:—The Hanes Table, with Patient in Position.

The modus operandi of this specialized form of examination varies from the very crude and perfunctory to the most elaborate and minutely detailed. I do not intend to describe them all, but will endeavor to make a word picture of the procedure of examining the rectum as practiced at the Midtown Hospital, New York City, and in my private office.

In a recent article, the late M. J. Synnott[1] described in detail the equipment of this clinic, and there has been very little change in it since this work appeared. In brief, the clinic is patterned after the out-patient clinic of St. Mark's Hospital, London.

Before the actual examination is begun, the patient is questioned and the answers recorded upon a specially printed form (ours is 8x10 inches), so worded that most of the answers that are of no interest to the case in question may be stricken out. The material covered is: chief complaint and its duration; past rectal history; bleeding; itching; pain; prolapse; bowel function; history of travel; and such information as loss of weight, appetite, etc.

After the history is recorded the patient is ushered into a screened cubicle, where he is instructed to remove the outer clothing and to loosen all constricting bands; then he is shown to the foot of the Hanes table (Fig. 1). Practically all the examinations are made in the inverted position of Hanes, unless there is a special reason for some other. Patients with cardiac lesions or high blood-pressure, cripples, very old people, etc., are dealt with by placing them on the left side, with the legs drawn well up against the abdomen. This left-lateral position is also very useful in ascertaining the degree of prolapse present. We seldom use the knee-chest and knee-elbow positions and rarely, if ever, use the lithotomy position. The rule of position at St. Mark's Hospital is: the knee-chest position for males and the left lateral for females. A. L. Abel[2], of the Gordon Hospital for Rectal Diseases, London, advocates the use of the right-lateral position in a current paper.

Inspection

As soon as the patient is inverted into the Hanes position he is draped with a sheet in which a circular window has been cut, a 150-Watt, special-filamented electric light (on a goose-neck floor stand) is focused upon the parts to be examined, and a careful inspection is begun. Everything concerning the anal verge, perianal skin, buttocks, caudal region, perineum, scrotum, etc., should be noted. Certain questions should pass through the examiner's mind: Is there protrusion, retraction, swelling? Are there scratch marks? Is the skin normal? Is it red, wet, sodden, parchment-like? Are rugosities, ulcers, fissures, or fistulous sinuses in evidence? Are there skin tabs or "sentinel piles"? Is there protrusion other than of the bowel, such as giant papilla? Are purple external thrombi present? Careful inspection should also inform us as to the presence or absence of syphilitic lesions, new growths, or lymphogranulomatous lesions. All abnormalities of the perianal skin should be traced out to where healthy skin commences and these borders carefully recorded by a diagram, as this will enable one to keep close check upon success or failure of treatment, especially that of the pruritides.

Palpation

Before the finger is passed into the bowel one should palpate, with the ball of the index finger, all suspicious-looking lesions, especially the perianal skin covering those areas

where fistulous tracts are suspected. A well-trained finger can often accurately delineate a tortuous tract which, upon inspection, appears quite straight; many horseshoe-shaped tracts become quite apparent by this method.

The rubber tissue finger cot and a tube of good lubricating jelly are all that are necessary for the digital examination. Vaseline is messy and sticky; lubricating jelly is water-soluble and readily washed away.

The secret of the success of the digital examination lies in its gentleness, for it is at this stage of the examination that the patient forms his opinion about the examiner's technic in reference to pain. At the outset, let it be said that, should the patient experience any undue pain upon the introduction of the finger or should there be any degree of spasm of the sphincters, the examiner should not attempt to pass the finger without the use of a suitable local anesthetic, in order to make him more comfortable by relaxing the muscles as well as anesthetizing of the parts[3]. This is especially important in such cases as acute fissure-in-ano and other painful lesions. The injection of 10 cc. of Anucaine into the deeper perianal tissues will immediately banish all pain and thoroughly relax the muscles; but do not use Anucaine in the presence of pus.

The index finger is carefully introduced into the anal canal with a circular motion, the ball of the finger facing anteriorly. This should consume many seconds. The finger is passed only to the depth of the second joint, which will bring its tip to the level of the upper margin of the external sphincter; then, with sweeping motions, the right and left sides are studied. This will elicit such information as the presence of hypertrophied papillae, abscess formation, fissures, and ulcers; and it is at this level, between the sphincters, that we can often palpate the internal opening of a fistula-in-ano. In this connection it is well to concentrate upon the deviations from normal, especially in the posterior midline, known, in the proctologist's parlance, as "six o'clock"; "twelve o'clock" being the anterior midline. The tone of the sphincters is to be investigated in all unanesthetized cases; this affords much information, especially in cerebrospinal syphilis.

Now the finger is passed to its full length for the second "promenade." Unless internal piles have undergone definite fibrotic changes it is practically impossible to palpate them. The condition of the levatores ani is now determined. Chancres, ulcerations, edematous mucosa, abscesses, fistula sinuses, new growths and stricture formation are all to be borne in mind. The prostate and vesicles, in the male, and the uterus, in the female, are readily palpated. A thorough rectal examination has often clinched the correct diagnosis of acute appendicitis, prolapsed ovary, fibroid tumor of the uterus, and even an ectopic gestation. The coccyx should be grasped between the inserted index finger and the thumb and its degree of motion ascertained. Any pain, swelling, or spasm connected with the coccyx should be noted. Rectoceles may be investigated at this time.

Before disposing of the subject of the digital examination it would be well to mention the use of this method, together with the use of the probe, in order to palpate the entrance of the probe into the anal canal or lower rectum through the internal opening of a fistula. The educated finger can also detect the inrush of a stream of methylene blue solution that is injected through a fistulous tract. Probes should be made of very flexible metal and used with the utmost caution. As the finger is slowly withdrawn the odor should be noted (the odor of cancer is different from any other, such as that of ulceration or pus). The highest point the examining finger can reach is about 4½ inches, and beyond this our investigations must be aided by instruments of vision and the x-rays.

Instrumental Examination

For the routine ano-recto-sigmoidoscopic examination it is necessary to have serviceable equipment—short proctoscopes and the longer sigmoidoscope, which can be passed beyond the recto-sigmoidal junction. The large and small Brinkerhoff speculums and a similar pair of Lockhart-Mummery's should be on hand, and the wire proctoscope is also of great service, especially in searching for internal fistula openings, after the injection of methylene blue solution into the tract. All these instruments are fitted with proximal light carriers.

A useful set of speculums—a short and a long one—has been designed by Gorsch and has given me excellent service for many years (see Figs. 2 and 3). The proctoscope measures 1 inch in diameter at the proximal end and tapers down to ⅞ inch distally, in a bevelled opening, on the long side of which the instrument is 3 inches long, and the short side 2½ inches. The flange is ample, so that a fat buttock will not cause obstruction, and just where the flange is joined to the tube there is a loose collar, upon which the light receptacle and handle are attached. This affords a complete play of the light from all angles of the circle, and the tube may be easily rotated while in the canal by a simple twist of the inserted obturator. The flange is marked with an indentation to designate the short side of the tube. The handle is

attached at an obtuse angle, which permits the instrument to be held by an assistant so that his hand is always out of the operator's view. The light receptacle is so constructed that the light can be moved in and out of use by the mere touch of two fingers.

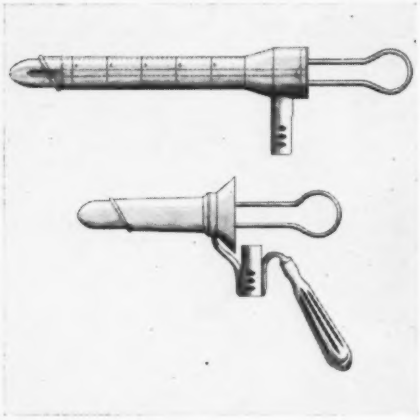

Fig. 2:—(Above) The Gorsch Sigmoidoscope.
Fig. 3:—(Below) The Gorsch Proctoscope.

The sigmoidoscope is made of cylindrical, 15/16 inch tubing, and it also ends in a bevelled distal opening, the long side being 6¾ inches long and the short side 6 inches. A suitable lens-cap, with an air bulb, can be readily slipped over the proximal opening. The short and long alligator forceps, small cotton "cherries," a probe or two, and the suction apparatus complete the equipment.

The proctoscope is gently inserted to its full length and the obturator withdrawn. Then the instrument is moved in all directions, while at the same time it is being slowly withdrawn. During this time the operator must carefully note any deviations from the normal and record them as soon as possible. Every bit of the mucosa must be studied minutely. When one has arrived just below the pile-bearing area, the patient is instructed to bear down with force. This procedure brings the piles (if present) well into the lumen of the instrument, and they may be further studied by grasping them with the short alligator forceps. Space is insufficient for the enumeration of all the possible lesions in this region. The use of the slotted speculum facilitates the locating of sinuses and the study of fissures and ulcers.

Gentleness is the keynote of success in passing the sigmoidoscope, and at no time during this procedure should the patient be subjected to any undue pain. Should there be any complaint on this score, its cause should be immediately ascertained and corrected before proceeding further.

The lubricated instrument, armed with the obturator, is passed to just beyond the sphincters, the obturator is then withdrawn, the light attached, and the examination is begun under direct vision. It is moved from side to side and advanced into the bowel with extreme caution at all times. Should it be difficult to locate the lumen, the lens-cap, with the insufflator bulb, is attached and puffs of air will aid in pushing aside the prolapsing walls of the bowel to enable the advancing tip of the sigmoidoscope to make progress. The bulb should be manipulated only by the examiner, and not deputized to the assistant or nurse. From time to time it may become necessary to wipe the field clear of feces, discharges, or blood with the cotton "cherries" grasped by the long alligator forceps or by means of actual suction with the pump.

Patients with a short mesentery are difficult to examine and our caution should be redoubled when the tip of the instrument is passing through the recto-sigmoid junction. After the sigmoidoscope has been passed its full length (into the sigmoid colon), the actual examination begins, and this consists of studying, in great detail, every square centimeter of the mucosa as the instrument is carefully and slowly withdrawn. The valves of Houston are manipulated with the tip so that their upper faces can be seen. Here again, lack of space forbids a more complete discussion of all the possible lesions one may encounter; but these are fully discussed in the textbooks.

The foregoing examinations must often be supplemented with further studies, employing such methods as the barium enema and meal, with x-ray studies; lipoiodol and x-rays, for fistula study; such laboratory work as feces examination, urinalysis, blood studies, Wassermann and Kahn tests; the Frei test; parasite and ameba searches; the biopsy; bacteriologic investigations; and the recognized reactions for tuberculosis. The suggestions here given will, however, suffice for most routine proctologic examinations.

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FOR OFFICE THERAPY

RUSSELL A. WINTERS, M.D.

Treatment of Gonorrhea in the Male

A New Combination, Including Hyperpyrexia

By Francis H. Redewill, M.A., M.D., San Francisco, Calif.

SINCE the publication of a former article entitled "Gonorrhea in the Male,"[1] there has been considerable change in the therapeutic procedure. One of the most important measures—heat applied to the penis by means of electrodes attached to a diathermy apparatus—has, however, been adhered to during the past fifteen years. Two of the outstanding changes are the replacement of the penis clamp with a flat, curved copper plate and the substitute of Silvol, Neo-Silvol, or Argyrol, freshly prepared with milk of magnesia solution, for mercurochrome and gelatin.

Silvol, Neo-Silvol, or Argyrol, in crystal form, is added to U. S. P. milk of magnesia to make a 10-percent solution, shaken well, and used *fresh*. Just enough of such a solution should be made up to last about one week. The fresher the solution is, the less irritating it is to the inflamed urethral mucosa. Neo-Silvol in milk of magnesia is very popular with the patients, not only because of its efficacy, but also because the solution is pure white and does not stain the clothes.

The mode of injecting the new solution is similar to that used with the mercurochrome solution, it being held in the penis by means of a condom. The amount used depends upon the chronicity of the case. In acute gonorrhea, only 1 dram is injected before the condom is applied; in chronic cases about 50 cc. is injected, so that it will come in contact with the entire urethra and the inside of the bladder. Then the condom is applied over the head of the penis.

Method of Applying Condom: The urethra is first injected with the solution; then either a rubber clamp is placed over the corona, or two fingers of the left hand clamp the penis at the same place. The rolled-up condom is placed over the meatus, rolled up to the corona with the right hand, and a rubber band is put over the condom at the corona. The penis is then placed dorsally on the abdomen, and a copper plate, 8 inches square and ⅛ inch thick, is molded to fit snugly over the penis as well as the abdomen. The copper plate has a trough bent into it in the middle to fit over the penis, and the outer edges are bent to fit the walls of the abdomen. A sand bag is then put over the copper plate, to hold it in place and to insure its perfect contact with the skin. The skin and plate are first covered with shaving-soap lather, to avoid any arcing of the electricity. This becomes the positive pole connected with the diathermy machine. The negative pole is a larger plate, placed under the buttocks.

If a gelatin mixture is used, it is prepared as follows: 100 Gm. of C. P. granulated gelatin is dissolved over night in 200 cc. of distilled water. In the morning the jelly is placed over a water bath and diluted to 1

liter; then Argyrol, Silvol or Neo-Silvol is added to make a 10- or 20-percent solution. If this solution is heated to 140° F., it insures

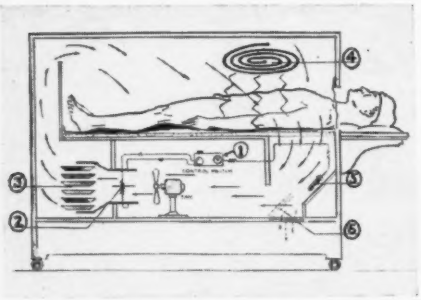

Fig. 1.—Kimble cabinet, diagrammatic section. Note thermostat control switch (1), heater coil (2), humidifier (3), and the heavy insulated coil of the Inductotherm (4), suspended above the patient's chest and abdomen. The temperature in this cabinet at all times is 100° F. Fever is generated in the patient solely by magnetic waves entering the patient's body from the suspended coil. The thermostat is shown at (5); vent for cooling (6).

perfect solubility of the gelatin and, with the silver, renders the solution practically sterile. This silver gelatin solution is cooled to about 105° F. in a pint vacuum jar, where it will remain liquefied for 12 hours or more, or is solidified at room temperature. Although it requires some time to prepare this gelatin solution, its advantage over an aqueous solution is threefold: First, gelatin mixtures approach more nearly the osmotic index, being less injurious to the tissues than aqueous solutions; second, patients can endure a stronger concentration of the drug in gelatin than in aqueous solution; third, a 20-percent gelatin solution of Argyrol or Silvol is more easily borne than a 10 percent aqueous solution, and considerably more diathermy can be applied with the gelatin solution.

Hyperpyrexia with Local Diathermy

For more than ten years I have been using local diathermy with injections in treating acute gonorrhea. I give from 15 to 30 minutes of this local heat and find that it requires, on an average, about three weeks to clear up these cases. It takes three or four weeks instead of that many days to cure these cases because the comparatively cool blood supply that bathes all these tissues dissipates the heat. Therefore, even if the tissues are more or less penetrated with a temperature of 115° or 120° F., the rapid circulation of a comparatively cool blood stream through these tissues dissipates the heat and the diathermy cannot accomplish the most benefit.

It occurred to me to raise the temperature of the blood a number of degrees, at the same time using diathermy locally. This was accomplished by putting the patient in a modern fever-heat cabinet and raising his temperature to 105° or 107° F. for several hours, at the same time applying local diathermy to the penis, which had previously been injected with the Neo-Silvol-gelatin solution. This has been my method of procedure ever since Neymann,[2], Desjardins,[3], Kimble,[4], and a number of others reported using hyperpyrexia in treating acute gonorrhea.

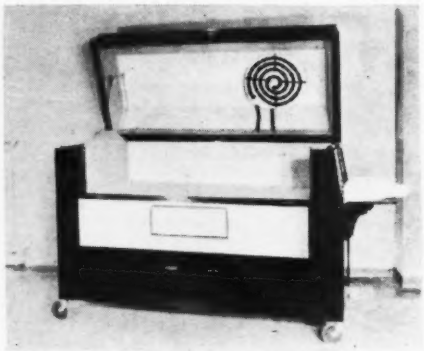

Fig. 2.—Kimble cabinet with the top lifted and side panel dropped down. The patient lies on a sponge-rubber pad, 1½ inches thick, covered with white rubber cloth and terry cloth. Note the Inductotherm coil attached to inside of top. When the lid is lowered, the coil can be lowered or raised at will within the proper distance of the patient's chest and abdomen.

Although we cannot describe all the apparatus that is being used for raising the temperature, we will describe, briefly, a few of the electrically-operated cabinets.

The electric-light cabinet has been reported by Hoverson,[5] and Morrow,[6] who have attained temperatures of from 103° to 104° F. in three to four hours. When the current is cut off, a further rise is attained—from 105° to 106°. It is reported by Nattrass and Evans,[7] and also in the findings of Redewill, Potter, Kimble, Holmquist and Desjardins, that the patient becomes fatigued before the fever level is reached—and then it has to be maintained for several hours.

The air-conditioned cabinet known as the "Kettering Hypertherm" is strongly favored at the Mayo Clinic,[8]. Into this, heated and humidified air is introduced from an apparatus which is, itself, outside of the chamber. The patient's body is entirely free within the chamber and can be kept under constant observation. Usually the desired fever level can be reached in 90 minutes. At the Mayo Clinic this treatment has been used chiefly for treating gonorrhea and its local complications, for gonorrheal arthritis, and also for a few cases of neurosyphilis. The most striking success of fever therapy is seen in the treatment of gonorrhea and

gonorrheal arthritis. The aim in gonorrheal infections is to maintain a rectal temperature of 106° or 107° F. for from four to eight hours. This temperature exceeds the lethal level for gonococci, which has been determined in vitro by Carpenter, Boak, Mucci and Warren, [9] et al. Possibly this explains the singular success of hyperpyrexia in gonorrhea, but the effect of the treatment in other conditions, in which the lethal level of the infecting organisms is higher than can be applied therapeutically, shows that the actual destruction of microorganisms is not necessarily an element in success.

The newest and most ingenious apparatus is that offered by the General Electric Company and known as the Kimble Inductotherm cabinet. It is an air-tight cabinet that is kept at 100° F., with humidity of from 50 to 70 percent, and automatically regulated by a thermostat, humidifier, and electric fan (Fig. 1). The air is heated in a compartment below the one in which the patient lies naked, resting comfortably on a thick, rubber-sponge mat. Above the chest and abdomen is suspended a closed coil, which generates magnetic waves in the patient's body and raises the temperature to 105° F. in from 90 to 110 minutes (Fig. 2.). The interesting feature about this cabinet is that, while the patient's body is bathed in humidified air at not more than 100° F., his temperature quickly rises to the required 105° or 107°. Because of the evaporation of the profuse perspiration, he is more comfortable, his pulse is slower, and his physical condition throughout the entire treatment is far better than during treatment in any other type of cabinet. This cabinet (Fig. 3) was used with extremely satisfactory results in treating the 55 cases of acute gonorrhea, with complications, that are reported here.

The Kimble cabinet is so arranged that the patient is surrounded with conditioned air, just comfortably warm. It is air-warmed, not for the purpose of heating the patient, but to keep the cabinet at approximately the same temperature as that within the body. Thus the dissipation of heat is prevented, insulating properties are greatly augmented, and the patient is made more comfortable. A special door in the cabinet facilitates the taking of rectal temperatures. The current consumption when using the Kimble cabinet with the Inductotherm is much less than that of a hot-air cabinet. This is due to the excessive current used in the grid-type resistance unit, which sometimes requires a special line. The patients who have received treatment in both the heating bag and the Kimble cabinet invariably favor the latter. We have observed that the patient's pulse is slower in this cabinet than in any other type of bag or cabinet. Thus it appears to incorporate all the good points and eliminate the undesirable ones.

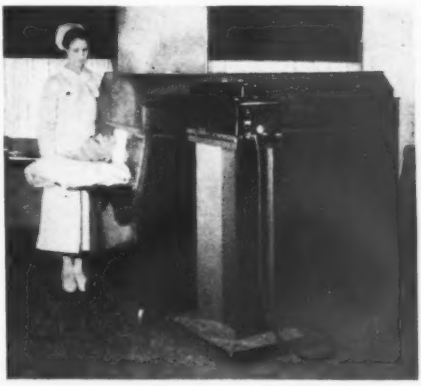

Fig. 3.—Kimble cabinet, closed, with Inductotherm attached to the suspended coil shown in Fig. 2.

Since hyperpyrexia plays such an important part in the new method of treating acute gonorrhea, we shall explain the preparatory treatment, sedatives used, metabolic changes, and the dangers of this particular type of therapy.

Preparation of Patient for Hyperpyrexia

The same measures should be followed in preparing the patient for hyperpyrexia treatment as for any major surgical operation, such as a careful physical examination, including a basal metabolism test, electrocardiography, blood-pressure readings, and blood tests. Special emphasis should be placed on the study of the basal metabolism and the circulatory system. Ordinarily the basal metabolic rate (B. M. R.) increases 7 percent with each degree of fever. If the rate is quite low before treatment is started, the hyperpyrexia will be accompanied by annoying symptoms, such as air hunger, dyspnea, weak and rapid pulse; but by the administration of thyroid extract previous to the fever treatment, these symptoms can be obviated.

Unless contraindicated, it is well to advise the patient to eat plenty of carbohydrates for a few days before starting the fever treatment. Laxatives should be taken the night before beginning the treatment and no breakfast should be eaten the next morning.

Just before the treatment the patient is given, intravenously, 0.1 Gm. of Mercurochrome in 500 cc. of 10 percent dextrose solution. During the past fifteen years we have depended on this measure to prevent or clear up any of the untoward symptoms that might develop. Also patients in a generally run-down physical condition, with very active, fulminating gonorrhea, seem to do better when these Mercurochrome injections are given regularly. The dextrose acts as a

general tonic, just as it does after major surgery. Since the metabolic rate is increased, the dextrose is burned and the patient develops a high fever much more rapidly and with less discomfort and does very much better than when the split sugar is not injected.

When a temperature of 105° F. is attained in the patient, the Inductotherm is disconnected and he can turn at will in the cabinet. At this juncture we are in the habit of giving an injection of 4 cc. of Edwenil intramuscularly, into the gluteal muscle. This stimulates the reticulo-endothelial structures and builds up bodily resistance. Recently it has been shown that a marked degree of clasmatocytosis occurs in infected areas when this antigen is given. By giving Mercurochrome and dextrose intravenously, Edwenil intramuscularly, and Neo-Silvol with gelatin into the penis, with local diathermy, the infection is cleared up much more rapidly and with lower fever temperature than when treated with hyperpyrexia alone.

Sedatives and Stimulants

The sedatives used are the pentabromides of Merrell, phenobarbital, Sodium Amytal, and Nembutal, before the treatment is started. If necessary to correct nervousness, 1/6 gr. (10 mg.) of morphine may be given, hypodermically, before and in the middle of the treatment. A half-hour after treatment is started, from 2 to 4 drams of whiskey are given, to dilate the superficial blood vessels and cause the blood to become heated more readily. Whiskey also acts as an excellent sedative tonic[10]. Carbogen is a good supplementary sedative for patients who show respiratory disturbances. Occasionally a patient will have very labored breathing in the first hour of treatment; then it is absolutely necessary to have a Carbogen tank ready for use. Caffeine, hypodermically, and also Coramine ampules, as well as hot coffee, are of value in pending heat collapse. Hypodermic injections of epinephrin are, however, contraindicated, because they contract the superficial capillaries, thus retarding the loss of heat through the skin.

Unskilled Hyperpyrexin Treatments are Dangerous

Many hospitals throughout the country have constructed home-made cabinets with electric-light bulbs, infrared heating units, hot-air heaters, or other agencies, in an attempt to introduce heat into the patient's body from without.

The technic used is as follows: Without any preparation whatever, the patient is put into one of these cabinets, the electricity is turned on, and the temperature is read occasionally. When the temperature reaches 105° F., he is considered "done." The power is partially turned down or shut off completely, and the attending interne trusts to God that the temperature will not go much higher.

Everything may go smoothly for about three treatments; then, with the fourth treatment, for some unknown reason, the patient's temperature does not remain at the proper height, but keeps soaring—107°, 107.5°, 108°, or even as high as 108.5° F. With this high temperature all reflexes disappear, there is a deathly facial pallor, and no pulse. Then the patient passes out, and the hospital junks the apparatus. To our knowledge, this is exactly what has happened in six hospitals on the Pacific Coast. No wonder that the general application of hyperpyrexia is in disfavor among some doctors!

Hyperpyrexia is a specialty in itself. A specially-trained nurse should be with the patient constantly throughout the entire treatment. Such a nurse should be as highly trained as an anesthetist, and must watch every minute for changes in the pulse, in order to avoid disaster. A physician who is expert in this specialty must be near at hand also.

Heat Therapy Reaction

Hyperpyrexia treatment may produce several types of reactions, but, since knowledge has increased in this work, the number of severe reactions has been reduced to a minimum. Restlessness can be controlled with pentabromides, Sodium Amytal, Nembutal, codeine, Dilaudid, or morphine. Nausea, vomiting, and abdominal cramps have been minimized by the intravenous administration of 500 cc. or 10-percent dextrose solution in a saline medium. Morphine produces annoying nausea and vomiting in some of these cases and should be avoided if possible.

If a heavy meal is taken within four hours of a fever-heat treatment, nausea, vomiting, and abdominal cramps may be expected, because digestion is practically stopped during this treatment and no hydrochloric acid is secreted. For example, in one case a breakfast of cracked wheat, served two hours before a treatment, was vomited five hours after the treatment was completed. The wheat in the vomitus was absolutely unchanged, showing that no digestion had taken place.

Another reaction that may occur is tetany. This condition develops in patients who are given fever treatments in cabinets where the heat is forced from outside the body, by hot air, steam, electric-light, or infrared baths. Tetany is produced because the hot air, applied to the skin, stimulates respiration and causes alkalosis, which depletes the body of its calcium. This condition can be remedied easily by the intravenous administration of 10 cc. of 10-percent calcium gluconate solution.

Analysis of Cases Reported

Of 55 cases of acute gonorrheal urethritis that received fever treatment, 8, or 15 percent, did not complete the treatments; 6, or 10 percent, were not cured, even when a maximum of seven fever treatments were given with regular treatment; 41, or 75 percent, were cured, as proved by symptoms and tests.

The average height of the fever developed was 106.5° F. for five hours. The treatments were given in a Kimble cabinet, usually every other day. The number of treatments ranged from two to seven, the average being five. Thus a large proportion of the patients were cured in eight days or less. These treatments were given in the office, and two or three hours were required to cool the patient off and get him in proper shape to leave.

Patients who have been treated improperly before coming for hyperpyrexia treatment nearly always present a mixed infection, which complicates the picture considerably. The 6 uncured patients mentioned above came under this class. Such cases may require ten or more fever treatments.

Untoward Results

We have had no marked untoward results in any of our cases. A large share of the credit for this is due to our staff of experienced and well-trained nurses, who have been giving these treatments for the past six years. As reported in several articles, we began with diathermy fever heat, but during the past six months have been using the Inductotherm with the Kimble cabinet. Skill in one kind of fever treatment prepares one for giving any type of hyperpyrexia, the only difference being in the technic of manipulating the different cabinets, and that can be mastered quickly. The most important thing is the proper management of the patient while under treatment, and here is where the nurse's part comes in. Most nurses require months to learn this hyperpyrexia technic—some never learn it. Like anesthetists, good hyperpyrexia nurses "are born, not made."

Another reason why we have had no serious results with hyperpyrexia in the treatment of acute gonorrhea is that each case is handpicked, as it were. No patient who has a concomitant systemic disease in which hyperpyrexia is contraindicated, is taken, for such rigorous treatments would spell disaster in tuberculosis, diabetes, Bright's disease, pernicious anemia, or osteomyelitis. Also, one should be very careful about stimulating a high fever in patients who have little resistance—those who are extremely emaciated, run down, or who have been "burning the candle at both ends." Fever heat stimulates a reaction in the body, but if a patient is "all burned out," he produces no reaction to hyperpyrexia—then watch out!

Conclusions

1.—The course of acute gonorrheal treatment has been materially reduced by using the more modern methods.

2.—A retained urethral injection of Neo-Silvol in gelatin, Mercurochrome in dextrose solution intravenously, and Edwenil intramuscularly, are cooperative factors of great value in the treatment of acute gonorrhea.

3.—Hyperpyrexia is the most potent means of aiding the urologist to cure acute gonorrhea in a comparatively short time.

4.—Local diathermy, applied to the injected urethra, markedly aids the hyperpyrexia treatment by maintaining a high temperature in the infected parts, together with the artificial fever that is quickly lethal to the implanted gonococci.

5.—Hyperpyrexia is dangerous if not given by skilled operators.

6.—Hyperpyrexia with chemotherapy and local diathermy will cure acute gonorrhea in one week in more than 85 percent of the cases.

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870 Market St.

The Injection Treatment of Hernia*

Part IV

By Albert W. Dowson, M.D., Chicago, Ill.

Treatment of the Inguinal Canal

THE patient, having had the same preparation as for the treatment of the internal inguinal ring, is now upon the table ready for the injection of the inguinal canal (see Fig. 3).

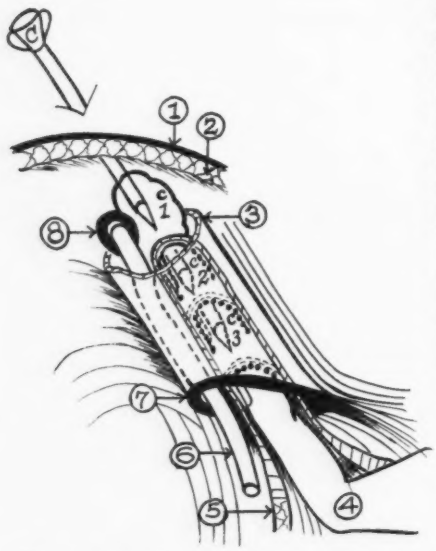

Fig. 3:—Treatment of the inguinal canal. (1) Skin; (2) fat; (3) inguinal canal; (4) index finger of the operator; (5) invaginated scrotum; (6) spermatic cord; (7) external inguinal ring; (8) internal inguinal ring; (C) needle inserted into the floor of the canal at the lower margin of the internal inguinal ring; (C-1) injected fluid at the lower margin of the ring; (C-2) needle inserted in the floor at the middle of the canal; (C-3) needle inserted in the floor of the canal at the margin of the external ring. The tip of the finger acts as guide for the needle as the canal is injected. The entire length of the canal is treated through the one needle puncture in the skin and multiple insertions into the floor of the canal.

The left index finger, by invaginating the scrotum, is inserted through the external inguinal ring into the canal up to the internal ring, which has previously been treated. Palpate the canal for width, length, and thickness of the floor, and for the location of the spermatic cord. With the aid of the thumb of the same hand, raise the tissues.

The syringe, with the needle attached, is taken in the right hand, the needle is inserted through the skin, fat, and the external oblique fascia, directed at the tip of the finger, into the canal. Release the hold with the thumb and displace the cord outward with the finger. The needle is guided to the beginning of the canal at the lower margin of the internal ring, where it is inserted into the tissues of the floor of the canal and the proliferant is injected.

The needle is then withdrawn from the floor and is guided by the index finger, downward and parallel to the spermatic cord, to the middle of the canal. Displace the cord outward, as before. The needle is again inserted into the tissues of the floor of the canal and the fluid injected, using two or more injections, down to the border of the external inguinal ring. The length of the canal has now been injected, from its origin down to the external inguinal ring, with multiple injections in the floor of the canal through the one needle insertion through the skin.

The needle is then withdrawn from the patient; the finger is removed and the scrotum is replaced in its normal position; the testicle is grasped and slight traction downward is made, to straighten the cord. The pressure, massage, rest, and the reapplication of the truss are made in the same manner as at the treatment of the internal inguinal ring.

Treatment of the External Inguinal Ring

The index finger, by invaginating the scrotum, is inserted into the external inguinal ring so that the ring rests upon the palmar surface of the finger (see Fig. 4). With the aid of the thumb of the same hand, raise the tissues, and displace the cord outward with the index finger. Palpate the ring for size, shape, thickness, and the location of the spermatic cord.

With the right hand, insert the needle through the skin and fat (tighten the grasp with the thumb and index finger so as to prevent rolling or gliding of the ring when the needle is inserted into the tissues), about ¼ inch medial to the margin, at the base of the internal pillar of the ring. *Care is taken not to insert the needle so superficially that the solution will enter the fat.* The usual injection of the solution is made at this location.

The needle is removed from the tissues and the index finger and the thumb are advanced outward along the ring to the site of the next injection, which is made the same as that at the internal pillar. Two or more injections are made about the margin, terminating at the base of the external pillar of the ring.

The injection about the ring being completed, the needle is withdrawn, the grasp of the finger and the thumb is released, and the same procedure followed as at the closing of the internal inguinal ring and the canal.

*This is the fourth, and last, part of a four-part serial article.

Treatment of Direct Inguinal Hernia

Injection of Hesselbach's Triangle

After the preparation of the patient and the usual procedure of inserting the index finger, explore Hesselbach's triangle. Begin at the os pubis, passing the finger upward

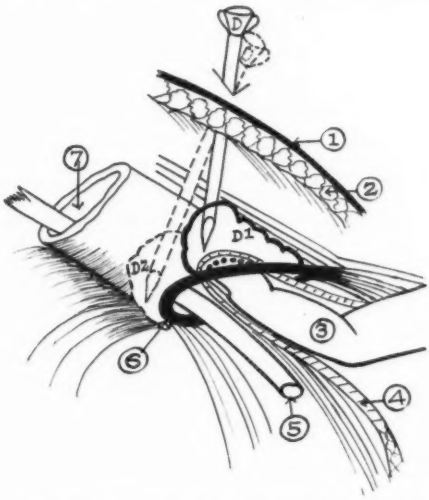

Fig. 4:—Treatment of the external inguinal ring. (1) Skin; (2) fat; (3) index finger of the operator; (4) invaginated skin of the scrotum; (5) spermatic cord; (6) external inguinal ring; (7) inguinal canal; (D) needle inserted into the tissues just above the external inguinal ring; (D-1) deposit of the proliferant at the internal pillar of the ring; (D-2) deposit of the proliferant at the external pillar of the ring.

along the lateral border of the rectus muscle to the point where the deep epigastric artery passes under it; thence outward and downward along the artery to Poupart's ligament, proceeding downward and inward along the ligament to the os pubis. After palpating the floor and the location of the cord, the examiner should have a touch-picture of the size, shape and contents of the area. *Be positive that the hernia has been reduced into the abdominal cavity.*

The thumb is used to aid in the raising of the tissues and, with the syringe in the right hand, the needle is inserted through the skin, fat and fascia of the external oblique muscle (see Fig. 5). Release the hold with the thumb and use the index finger to guide the needle downward, parallel and lateral to the lateral margin of the rectus muscle, to a point just above the os pubis, where the needle is inserted and the injection is made in the tissues. The needle is withdrawn and directed below and behind the conjoined tendon and the spermatic cord; here it is inserted into the tissues of the floor, and the usual amount of solution is deposited. Repeat the injections (two or more) until the triangle has been reinforced. This is done through the one needle insertion through the skin and multiple injections in the triangle. The treatment completed, the usual routine is carried out as on previous occasions.

The triangle being reinforced so that the abdominal viscera are retained within the cavity, the inguinal canal and the external inguinal ring are treated, in the order named, following the same technic as that outlined in the correction of indirect inguinal hernia.

Contraindications and Complications

In the presence of hemophilia, exophthalmic goiter, malignant disease, or any condition producing ascites, the hernia should not be

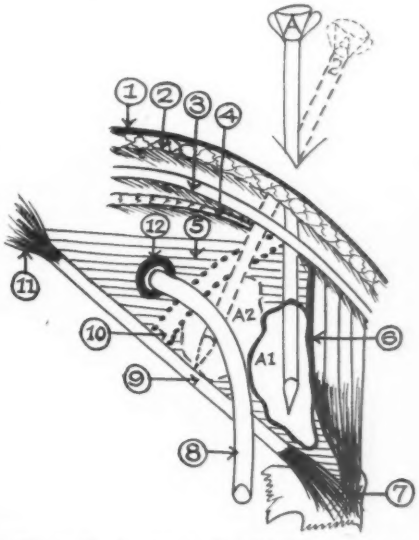

Fig. 5:—Treatment of Hesselbach's triangle. (1) Skin; (2) fat; (3) external abdominal oblique muscle; (4) internal abdominal oblique muscle; (5) transversalis muscle; (6) lateral margin of the rectus muscle; (7) os pubis; (8) spermatic cord; (9) Poupart's ligament; (10) deep epigastric artery; (11) anterior superior spine of the ilium; (A) needle inserted down to the apex of the triangle; (A-1) deposit of proliferating solution; (A-2) Needle inserted under the cord and solution injected into the tissues.

considered as suitable for the injection treatment. Strangulated or incarcerated hernias or inability to maintain the hernial mass in reduction, as well as those hernias associated with pathologic conditions in the alimentary or the genito-urinary tracts, are for the attention of the surgeon. They should not be treated by the injection method.

Upon complaint by the patient of intra-abdominal pain during the injection of the seroplastic-producing solution, discontinue the treatment immediately. The introduction of the solution into the abdominal cavity may produce peritonitis, followed by adhesions.

Local reaction, which is usually an aseptic

inflammation of the tissues, may be controlled by rest and the application of heat.

Skin irritations and erosions, frequently caused by the improper adjustment of the truss causing unequal pressure of the pad, by shaving, and by the injudicious use of antiseptics, subside upon the removal of the disturbing condition. For those patients having sensitive skin, the area is cleansed with alcohol, dried, and an application of the compound tincture of benzoin is made to the affected part. The region is covered with a sterile pad consisting of three or four layers of gauze, after which the truss is reapplied.

Edema of the cord or prepuce, and hydrocele are the most frequent complications. They usually subside without any apparent untoward effects.

The treatment of selected cases of hernia by the injection method has, so far, indicated that it is as safe as the surgical procedure for the repair of hernia.

175 W. Jackson St.

(THE END)

NOTES AND ABSTRACTS

Short-Wave Treatment of Pubertal Acne*

KNOWING the effect of short waves in cases of acute and chronic purulent diseases of the skin, it was obvious to try short-wave treatment in cases of prepubescent acne. The first experiments of this kind were made with a girl, suffering from confluent acne following the use of bromide. Hard and aching knots disappeared in the first week and incisions were not necessary, because the inflammatory infiltrations were absorbed spontaneously.

We used the 6-meter waves for treating the acne vulgaris. Our results have been bettered since we have begun to use especially formed electrodes, which allowed a homogeneous field. The short waves succeeded, in two or three weeks, in improving the symptoms of the disease. The constitutional endocrine basis of the acne vulgaris will not allow the complete healing by an external remedy like rays, but there is no doubt that we are able to shorten the duration of certain cases by short waves and to cause the absorption of infiltrations without large areas of scar tissue.

Case 1.—This 20-year-old student had suffered for about 5 years from a very active prepubescent acne, with constant recurrence. We treated the patient by the 6-meter waves, giving two series of 20 treatments—one every day—lasting about 25 to 30 minutes each. In the few months following the treatment the patient had almost no inflammation, the infiltration of the skin was decreased, and no new spots appeared.

Case 2.—A similar case—a baker, 23 years old. For two years he had had permanent prepubescent acne, which always became worse in summer. After about 30 treatments a remarkable and, during more than a year, a lasting improvement was seen.

Case 3.—A 20-year-old dressmaker was treated 20 times and then stopped the treatment for a whole year, because she left our city. Nevertheless, a year later, a remarkable improvement was maintained.

Case 4.—Showed an attempt to use short-wave treatment in cases of acne rosacea. This trial was, in this case, as well as in some others, not very successful. There was no great or lasting improvement.

All of these patients had been treated before, without any success, by the usual procedures.

DR. ERWIN LAST AND PROFESSOR STEIN.
Vienna, Austria.

*Brit. J. of Phys. Med., July, 1936.

Sclerosing Treatment of Hemangioma

THE subcutaneous injection of a 5-percent solution in water of the double chloride of quinine and urea produces results practically as good as those of radium in the treatment of hemangiomas, especially if it is given during the first few months after birth.

The fine, short-beveled needle attached to the syringe should enter the apparently normal skin beyond the edge of the tumor, and be directed subcutaneously, never intracutaneously for fear of necrosis. If no blood flows into the syringe on slight suction, inject a few drops slowly. Injection into the veins is inadvisable in infants, though it may be done safely in adults. The tumor in the area treated slowly becomes blanched, and the next day is swollen and bluish. Gradually this subsides, and if necessary the treatment may be repeated in one or two weeks. Many

small injections are better than a few large ones. A few drops to 1 cc. is enough for an ordinary case. Later in the treatment a larger amount, or in stubborn cases a 7-percent solution, may be used. Carbon dioxide snow is applied to the superficial tumors immediately after the injection. No further treatment is given until the reaction is entirely over.

This treatment is cheaper, safer, and less difficult for the general practitioner than the radium treatment.—M. DUCOURTIOUX, M.D., in *Synthese* (France), Feb., 1936.

X-Ray Treatment of Otitis Media and Mastoiditis

IN acute cases of otitis media, complications of perforation and mastoiditis are prevented and operation avoided by x-ray treatment.

This treatment is logical, in view of the favorable results obtained by the roentgen-ray treatment of inflammation elsewhere. There is also a scientific basis, in that the inflammatory cells, especially lymphocytes, are rapidly destroyed; phagocytosis is stimulated; and enzymes are liberated.

This opinion is based on the results in 50 cases, acute (31), sub-acute (8), and chronic (1), the patients ranging in age from 3 months to 58 years.

Treatment is with relatively low voltage, and consists of about 20 percent of the erythema dose. One treatment was required to produce complete relief in 12 cases of the acute form, while two treatments were required in 18 cases. Chronic cases required more treatments—as many as six.—JOSEPH H. LUCINIAN, M.D., in *A. J. Roentgenol. & Radium Ther.*, Dec., 1936.

The Management of Colds

FROM my experience I firmly believe that both the ultraviolet and infrared rays are valuable adjuncts in "cold" management. It is claimed that there is an inverse ratio between the amount and efficiency of sunlight and the number of respiratory infections—the more sunlight the less respiratory infections. This may be the rationale of ultraviolet treatment. There has been a decided improvement in our series of respiratory patients when the ultraviolet rays were used. This is applicable to the acute as well as the chronic cases and, I firmly believe, is one of the best measures for "cold" prevention. The infrared rays are useful especially in acute sinusitis and, if used sufficiently, are acceptable to the patient and shorten the course of the attack.—T. B. ZERFOSS, M.D., in *The Journal-Lancet*, Dec. 15, 1936.

Physical Measures in Proctology

OF the proctologic conditions particularly amenable to physical therapy and electrosurgery treatment, the following (with the methods which may be applicable) are outstanding:

Constipation: Massage, electric muscle stimulation, exercise, diathermy, and water by mouth or rectum are advocated, the procedure being dependent upon the causative factor.

Colitis, ulcerative and mucous: Here, also, the cause determines the physical therapy procedure. In the ulcerative type, fever therapy is now under investigation, and may prove definitely valuable. Other agencies employed are diathermy applied to the abdomen, static wave current, and ultraviolet irradiations.

Tuberculous peritonitis: Ultraviolet irradiation, above all other measures, is established in the treatment of this condition.

Anorectal stricture: Medical diathermy, combined with progressively increasing dilation, is of considerable benefit.

Hemorrhoids are treated by several physical measures, but desiccation over a clamp, combined with a distal ligature, is my method of choice.

Fissure in ano may be treated by diathermy or desiccation.

Gonorrheal proctitis: Fever therapy seems destined to play a very important part in the treatment of this and other gonorrheal conditions.—R. V. GORSCH, M.D., in *N. Y. St. J. of M.*, Dec. 1, 1936.

Healing of Linear Fractures of the Skull

IN 52 cases of linear fractures of the skull reexamined roentgenologically, where the original films were available for comparison, 36 cases had suffered their fractures more than two years previously. In all of these cases there was complete disappearance of the fracture line, and no evidences of calcium deposits in the brain meninges; 7 cases of from 5 to 16 months' duration showed visible fracture lines, but with sufficient evidences of repair to enable them to be recognized as old fractures; 7 cases of from 1 to 12 months' duration showed no evidences of repair.

It appears that, in adults, roentgen evidences of fractures will disappear in about two years; and that in about 8 months, sufficient repair will have occurred to give the appearance of an old fracture. In children, the time is more variable, but is probably about one year, except in very young patients, when healing may occur in four months.—ROBERT C. VANCE, M.D., in *A. J. Roentgenol. & Radium Ther.*, Dec., 1936.

A LIVING FOR THE DOCTOR

(The Business of Medicine and the Art of Living)

The Medico-Legal Side of General Practice

By W. F. English, M.D., Saginaw, Mich.

IN the medico-legal field we meet an extensive variety of legal details in the multiplicity of compensation and other legal cases in the industrial field, that occur along the borderland of medicine and law; and it is possible, no doubt, in medico-legal procedure, for negative results to follow for want of exact data and profound thought.

The physician stands between the pitfalls of the ill and the injured; between the living and the dead. He feels a personal, scientific interest in the afflictions of his patients and gives them his best skill and attention, at the bedside, in the professional demands of daily affairs, and in litigation that may result from the casualties of industrial life.

To promote general welfare and progress, every sane and mature individual should be permitted to pursue his own happiness in his own way, so long as he does not infringe upon the rights of others.

Medicine touches various sciences, such as physics, chemistry, botany, etc., and many forms of insurance policies and risks, so blended with the legal phases of economic life, at so many points, that just and honest diagnosis, prescribing, manipulation, and evidence are demanded on the part of the physician, the employer, the court, and the injured, in the daily casualties of the great industrial army. The adjustment of those various interests is vested in the authority of state compensation and accident boards, subject to all angles of attack and defense in compensation and various other courts.

The purpose of medico-legal evidence is to show important landmarks of the human body in health and disease; or the physiology and pathology of living tissues, with reference to the best-known theories and data necessary as potent evidence in the numerous and diversified traumatic conditions. In this particular field of the correlation of medicine and law, it becomes necessary to concentrate upon those facts that show a clear understanding of functional disturbances. The pathologic lesion responsible for present symptoms and a logical and definite reason for the medico-legal adjustment, interpreted as a primary or secondary consequence of perverted bodily function, demands definite discriminatory evidence.

Most cases of accident litigation raise medical questions which so complicate equitable compensation that only a physician can answer them satisfactorily, to determine the relation between the injury or disease and the probable period of disability. Many physicians differ in honest testimony on the same case, not from prejudice, but because of different view points. The positive effort, however, is to show a standard relation of injury to disease, period of disability, functional capacity of the injured, the responsibilty of the occupation, detection of malingerers, and the legal, pathologic and moral adjustment of the contentious and important condition known as "traumatic neurosis."

Disability may be considered to continue until normal function of cells of injured tissue becomes restored, which provides for the biologic process of adjustment of anatomic conditions. Permanent disability may be estimated when the condition is more or less stationary and shows no improvement with treatment.

In considering disability results, one may be guided by the history of:

1.—Injury.
2.—Treatment of the patient.
3.—Discharge from treatment.
4.—Ability to work.
5.—Inability to work.
6.—Regular employment.
7.—Light work; not regular employment.
8.—Change of occupation because of a handicap.
9.—Consideration of rehabilitation.

It is recognized in law that the burden of proof, to establish beyond reasonable doubt that the plaintiff has been guilty of contributory negligence in accidents, rests upon the defendant. The effort of preparing for such a trial becomes a separate and distinct function from the actual trying of the case.

In all compensation or accident cases, whether with utility corporations, various

lines of industry, or insurance companies, a careful, detailed and skilled preparation, on the part of the medico-legal staff, is necessary for both plaintiff and defendant, as either side is liable to face an adversary highly skilled in this technical phase of court practice. The attorney on either side should not trust accumulative evidence, through which he may be able to spring a specific act of negligence. Counsel, before trial, should assemble all minute facts attainable, with the one clear purpose of determining the specific act of negligence which will emphasize the application of the rule of law.

While volumes have been written upon the subject of interviewing the client, the chief point of note is to draw a close line between the statement of facts and opinions, sufficiently clear to secure a basis of understanding of the accident and its results, free from bias or distortion.

To rely solely on the client's version of the accident, often invites disaster at the trial; more so where much time has elapsed between the accident and the trial, or in the event that the plaintiff may have been approached by an adverse party. In such an instance, the story should be reduced to a signed statement.

In the great variety of cases and the many circumstances that occur, it becomes very easy for court and jury to sense the lack of careful preparation on the part of the counsel, which may weaken or destroy the case.

Counsel should be able to resort to hospital records, doctors' reports, and all available sources that may confirm the given history of the case at hand. Careful observation of any aggravation of the original injury through any act of neglect on the plaintiff's part is very important, as such a condition, when left to the defendant's counsel or to cross-examination, may result disastrously.

Slight diversions on the part of the attending physician, or rash conduct on the part of the plaintiff during recovery, are important points to note.

Important factors to weigh and consider in determining damages that may be demanded in a given case are:

1.—The nature of the injury and its effect on the injured.

2.—Whether the effects may be permanent or temporary.

3.—Extent of suffering likely, and results.

4.—Expense resulting for treatment.

5.—Loss of time and income.

A previous condition of ill health does not reduce the amount of liability on the part of the defendant.

The importance of visiting the scene of the accident; mapping and diagramming all details of distances, condition of the location and highways, and all available points in relation thereto; ascertaining available witnesses; the selection of the court (whether labor, circuit, or federal), as well as the selection of the type of place and jury (whether city, town, or country); defining identity of the kinds of animals that may be involved in a case; whether the animal was provoked by the plaintiff; and the multitude of tangents, as to sidewalks, roadways, bridges, railroad crossings, heat, cold, negligence on the part of a pharmacist, dentist, physician, nurse, or hospital; defective stairways or elevators; the status of landlord or tenant; automobile collisions, explosions, suicides, homicides and airplane casualties, come within the domain of the legal profession.

A rambling cross-examination upon the technicalities of medical evidence, as to how or why a witness arrives at such an opinion or conclusion, and allowing the witness a wide latitude in which to demonstrate his personal views, may lead to dangerous ground and weaken the case at issue. Medical questions should be clear and concise, and should not require too much analysis that might give the court and jury a chance to doubt the credibility of the testimony and give alert opposing counsel, who will have the subject matter well in hand, more effectiveness in correcting distorted facts. Caution in examining an expert in his own field is important and, when gracefully approached, may bring conclusive lines of inquiry.

Qualifying the medical witness is a procedure well known to the average attorney. A physician or surgeon is expected to possess and use that degree of care and skill exercised by the average practitioner of his profession in that locality. The performance of an act in an unprofessional and unskilled manner, or failure to act in a case under proper circumstances, may be considered bad practice or malpractice.

There are various schools of medicine and methods of treatment, and no statute which favors one school to the exclusion of others, so that, while a variance in the methods of care and treatment applied by the various schools is recognized in law, it is held that the treatment administered should be tested by the principles and practices of the school of medicine to which the practitioner belongs. The same rules hold in the field of dentistry as in the different schools of medicine.

Legal counsel in a given case will recall that the medico-legal evidence involves every phase and detail of medical service common to the healing art. Accurate knowledge of such matters as negligence, operations, amputations, disease, dislocations, foreign substances in wounds, skill in examination, abandonment of a case, the use of improper

instruments, errors in judgment, operation without consent or upon a wrong part or organ, lack of sterilization, faultiness in use of x-rays, radium or light, unnecessary operation, improper use of sound methods, a broken needle left in the tissues; and, in the case of a dentist, fracture of a jaw, removing a wrong tooth, or error in diagnosis, should become a part of the practicing lawyer's armamentarium.

The attorney who opens his trial with a clear-cut medico-legal pattern, and a definite order of proof in mind, has a decided advantage over opposing counsel who possess a store of facts with no particular plan of approach, and who flounders from point to point, expecting the weight of accumulative evidence to establish his objective.

Close discrimination may be drawn between subjective and objective symptoms. It is sometimes very difficult to determine the existence of pain; but spontaneous expressions of distress and suffering may be testified to by persons in whose presence such expressions were uttered. The distinction, however, between such expressions and descriptive statements of the sick or injured may be subjected to court rulings.

Details of disability, medical expense, and nursing hire, are sufficient to enable a jury to decide their reasonable value without expert testimony. If necessary, hospital records showing exact details of treatment may be subpoenaed for service as evidence.

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NOTES AND ABSTRACTS

The Patient's Liability for Treatment*

HOSPITALS, as well as physicians, are called upon frequently to render services in an emergency, before there is any opportunity to discuss charges or to determine who is to be responsible for the bill. Under these circumstances, as well as under other special conditions, disputes may arise as to the responsibility of the patient for the services and the amount of the charges. It is, therefore, not only interesting, but important to understand the basic legal principles governing such situations.

Where there is no express contract between the hospital and the patient, the law may infer a promise to pay from the surrounding circumstances or in the interests of justice. When a hospital or physician renders medical services in an emergency or to save life, it is not necessary, as a condition of payment, first to inquire as to the ability of the patient to pay. In such instances, "the physician when called, or when he volunteers his services, should not stop to inquire by whom he will be paid, or to make it known that he expects to be paid. One who becomes ill, and through unconsciousness, or otherwise, becomes incapable of acting or deciding for himself, is liable on the theory of an implied contract or promise that, having received the benefit of necessary medical aid and attendance, he must pay for them, no matter by whom the physician is summoned to perform them; and, from the necessity of the case, anyone is authorized to call a physician to treat him, without liability on the part of the person so calling a physician."

*N. Y. Physician, Dec., 1936.

Where the services are rendered without an agreement as to the amount of the charges, the law implies a promise for the patient to pay the reasonable value of the services. As has been decided by the courts, "a physician, in the absence of a special contract, may recover upon an implied agreement to pay for his services *quantum meruit*, when they have been rendered at the request of the patient, or of a person who, in the eyes of the law is regarded as being under a legal obligation to provide such professional service for the patient, such as a husband, or the parent of a minor child."

The value of professional care is a question of fact for a court to decide in case of dispute, based on various elements and circumstances. In arriving at the reasonable value of the services, among the facts which may be considered are the nature and extent of the disease or injury, the professional standing of the physician or surgeon, his skill and learning, and the time devoted to the patient. Although the result of the treatment may be taken into consideration, it is not a necessary element in fixing the value of the services. So long as the physician or surgeon exercises reasonable skill and care, he is entitled to fair compensation, whether the result of his treatment is successful or not.

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New York City.

A Free Press Saves Us

WITH all its faults, publicity is still the handmaiden of virtue. It has saved America and kept many leading citizens out of jail.

The ancient Greek, who inherited from Egypt and perfected a culture that never has been excelled, was still a traitor and a thief. Trusting him with public money was like trusting a cat to guard the canary.

If the Greece of art and learning and courage and high ambition had possessed in equal measure the more homely virtues of honesty and integrity, it might have conquered and held the world and saved mankind many centuries of darkness. It failed for want of character.

Russian history repeats the same story. Given character and honor, Russia would have defeated Japan, held her lines against Germany, and overwhelmed the Reds when Denekin and his army of ex-officers fought to save the old order.

It would please our vanity to believe that America is free of such a handicap because of our superior honor; but our whole record, from the selling of guns to the Indians to the latest sale of a city franchise, reveals a capacity for treachery and graft that only a free Press could hold in check.

We are saved by the fear of being found out. An alert Press is forever saying: "If you do it, I'll tell on you." And thus mere reporters have saved a nation, and the souls of gentlemen who handled the nation's tax money.—ROBERT QUILLEN, in *Fountain Inn* (S. C.) *Tribune.*

Use our reader service department "Send for This Literature."

Compulsory Health Insurance

THE medical profession's opposition to compulsory health insurance is based upon:

1.—Its harmful effect on the present and future health of the community.

2.—Its deterrent effect on progress in medical education and research.

3.—As a citizen, and a taxpayer, upon the resultant increase in taxation.

4.—As a man engaged in gainful occupation, its effects on his income.

5.—As the head of a family, its effect upon his ability to enjoy reasonable comfort by virtue of a fair remuneration, in return for his services, and opportunity to educate his children, in conformity with their social status.

We believe that compulsory health insurance in any form will result in the following:

1.—Limitation of free choice of a physician.

2.—Interference with the essential of efficient medical practice; i.e. the relation between the patient and his personal physician.

3.—Inhibition of preventive medical measures.

4.—Degeneration in the character of medical service rendered.

5.—Increase in morbidity.

6.—Increase in taxes.

7.—The establishment of a political bureaucracy.

8.—Increase in the cost of medical care, through the necessity for payment of an immense Army, necessarily engaged in administering the Act.—FRANCIS A. FAUGHT, M.D., in *Weekly Roster and Med. Dig.* (Philadelphia), Mar. 20, 1937.

BOOKS

Laird: Psychology of Buying

WHAT MAKES PEOPLE BUY. *By Donald A. Laird, Ph.D., Sci.D., Psychological Laboratory, Hamilton, New York. First Editon. Third Impression. New York and London: McGraw-Hill Book Company, Inc. 1935. Price, $2.50.*

"A book for all persons, but especially for sales and advertising men." This general statement made of Dr. Laird's new book should make it highly interesting and useful to the physician, for he is a professional combination of both. The Doctor has something to sell—his methods, prescriptions, and advice, as well as himself—and he is also an advertising man, in that he must make himself known and remembered.

It therefore behooves physicians to understand the motivations behind their "customers" (patients) in buying—what they buy, and why and how they buy it.

Dr. Laird describes what goes on deep down in the customer's head, in a clear and informative fashion. In the light of new surveys taken on "John Q. Public," this book gives a radically different slant on the consumer's unconscious desires and shows how amazingly few and fundamental are the motives that really control buying.

Every Doctor should find a place, in his practice and in his social and family life, to use the information presented in this highly practical book.

G. L., Jr.

UTOPIA

The happiest land and the highest civilization is that in which every capitalist is an unhampered laborer, and every laborer is a potential capitalist. Utopia is approached by degrees, not decrees—by the slow, toilsome improvement of the race. There never will be a Utopia of and for weakness and shiftlessness.—CHANNING POLLOCK, in American Mercury.

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 3 (Diagnostic)

Presented by Dr. Howard P. Benjamin, M.D., Omaha, Neb.

(See CLIN. MED. & SURG., March, 1937, p. 136).

RECAPITULATION: The patient was a single man, aged 25 years, a farmer. His friends started to take him to a private hospital 24 miles away, but had to return him to his room, as his pain was too severe to permit him to travel. The room was freezing cold, so I could do only a make-believe examination.

He had no fever, but there was excruciating pain over McBurney's point, and vomiting. I gave him ¼ grain (16 mg.) of morphine hypodermically, and sent him to a hospital 44 miles away, in a car filled with blankets and pillows. An x-ray examination showed nothing abnormal; the white blood cells were not increased. The patient went home, feeling comfortable, the next day.

Requirements: What is your tentative diagnosis? What further examinations would you have made or called for?

Discussion by E. C. Junger, M.D., Soldier, Ia.

Whether this is a real problem or not, depends upon the general makeup of the patient. If he was of a neurotic, hysterical type, he might have been malingering, to get out of doing some disagreeable piece of work; or he might have had a quarrel with his sweetheart; or someone might have threatened to beat him up; or he might have been drunk the day before or have attended the funeral of some friend who died of appendicitis.

A pain that yields to ¼ grain of morphine is not so very excruciating. It might have been caused by the passage of a small kidney stone through the right ureter; or by temporary occlusion of the appendix by spasm or by a fecalith. An ascaris (round worm) trying to explore the lumen of the appendix would be no picnic. An acute kink in the appendix or a spasm of any involuntary muscle is painful while it lasts.

I should not become unduly excited over a pain at McBurney's point, if there were no history of previous attacks; no fever; and no leukocytosis. If he was cured by a hypodermic injection of morphine and a ride to the hospital, why worry?

Discussion by J. A. Dungan, M.D., Greeley, Colo.

Appendicitis (acute) is ruled out by normal temperature; no increase of polymorphonuclear leukocytes; and by pain maximal at the start, instead of colicky. Vomiting would have taken place only after the incidence of pain.

One might assume a *ureteral calculus,* but probably the x-ray picture would have shown the stone. A right-sided hydronephrosis, or even a gallstone, might have extended the pain down to McBurney's point.

A right ureteral kink, with relief after morphine, is a possibility; and I have known a drink of whisky, in one not used to liquor, to affect a person similarly.

The direction of the radiation of the pain could have been stated with benefit; and likewise it should have been made plain whether there was an interrupted flow of the urine, and whether it contained blood.

A cecal impaction might cause this sort of pain from gaseous distention, which would be relieved, for the time, by morphine, and permanently by the passing of flatus or by washing out the impaction with *repeated* enemas.

Discussion by George B. Lake, M.D., Waukegan, Ill.

The history and description of this case are so sketchy and inadequate that a tentative diagnosis will be little better than a guess, but the report contains about the usual amount of information which is elicited in many examinations made in rural homes.

Extensive laboratory examinations were, of course, out of the question, and time-consuming physical examinations were probably impracticable, but it should have been quite possible to ascertain and state the character

and frequency of the pulse and respirations, and the condition of the peripheral circulation; at least the gross appearance of the urine (whether it contained obvious blood or bile, etc.); the presence and location of tenderness and rigidity on pressure; the direction and degree of radiation of the pain; the appearance of the tongue and other visible mucous membranes; the condition of the skin (temperature, color, moisture, etc.); the patient's facial expression and posture; and various other things. Even in a cold room, a warmed stethoscope could have been applied, under the bedclothes, to study the respiratory sounds over the bases of the lungs (diaphragmatic pleurisy is often afebrile, and sometimes causes acute abdominal pain). All in all, the presentation of the problem is decidedly unsatisfactory.

The general picture, however, at once suggests a "colic," due to spasm or temporary occlusion of a hollow viscus—ureter, bile ducts, or some part of the intestinal canal. When the patient reached the hospital, a careful urinalysis should have been made, and also an examination of the stool, to determine, at least, the presence of blood, bile, and pus in these excretions. The discussions by Drs. Junger and Dungan cover most of the important points. Dr. Benjamin's solution gives no adequate evidence of being anything more than a somewhat better founded guess at the condition.

Solution by Dr. Benjamin

Further examination was a urinary study, which revealed nothing abnormal, except the finding of a few blood cells. *Diagnosis:* Kidney colic.

I am quite certain that, if this man could have endured the first contemplated trip to the private hospital, an emergency appendectomy would have been performed, obviously unnecessarily.

Problem No. 5 (Urologic?)*

Presented by Lieutenant F. R. Moore, M.C., U.S. Navy

AN adult female, age 47, presented herself on Sept. 28, 1936, complaining of: (1) Frequency of urination; (2) difficulty in starting urine; (3) inability to completely empty the bladder; and (4) gradual increase in the size of the abdomen, during the past two years, without apparent reason. The urinary symptoms were first noted about two weeks before, as a slight difficulty in starting the stream, which gradually increased. The past two days she had been able to empty her bladder only after a hot enema, or twisting sidewise on the stool.

Past History: Essentially negative; two minor operations in 1920 (curettage and hemorrhoidectomy).

Examination: Essentially negative, except for the abdomen, which was markedly distended from the umbilicus to the pelvis; but because the patient was unable to relax the abdomen, the examination was unsatisfactory. The patient was catheterized, and 400 cc. of urine were obtained.

The following day, she had a complete urologic study; the bladder was normal; the left ureter was catheterized easily, but an obstruction was met 10 cm. up the right ureter, which was passed with difficulty with an F-5 catheter. The urine flow from both ureteral catheters was normal. Urine from the right kidney contained from 10 to 15 white blood cells per high-power field; urine from the left kidney was normal; both urine cultures were negative. The phenolsulphonephthalein appearance time on both sides, was 4 minutes; right, 9% in 10 minutes; left, 11% in 10 minutes. Bilateral pyelograms revealed considerable dilatation of the terminal calices of the right kidney, and a roughly circumscribed area of calcific density, approximately 1 cm. in diameter, directly in the path of the right ureter at the brim of the pelvis.

Two days later the patient developed signs of blockage of the right ureter (temperature, 101° F; pulse, 100; with marked tenderness over the right kidney and right ureter). She was taken to the hospital, and an F-5 catheter was passed with difficulty to the right kidney, after passing the obstruction 10 cm. up the ureter. The symptoms started to subside, and two days later, an F-7 catheter was passed to the right kidney. The temperature and symptoms subsided at the end of five days.

Requirements: Suggest diagnosis and further examinations required, giving reasons.

*Adapted from *Bul. Lake Co.* (Ill.) *Med. Soc.*, Mar., 1937.

BIRTH CONTROL IS HERE

Birth control is as much a part of our culture and our times as rapid transportation or technology. We cannot decide to have it or not to have it. We can only decide to try to understand its social implications and to attempt to guide its social direction. In itself it is neither good nor evil. It is the uses to which it is put, the fundamental human needs it serves, or denies, that are constructive or destructive.—MARY FISHER, Ph.D., in Birth Control Rev.

CLINICAL NOTES and ABSTRACTS

Treatment of the Acutely Ill Febrile Child*

INASMUCH as any acute febrile illness in a child is potentially infectious or even contagious, steps should immediately be taken to protect the other members of the household, especially other children. The sick child should be isolated in a separate room with separate utensils, should be put fully and completely to bed, and if feasible the mother or attendant should wear a gown and cellophane mask. If it is possible for a different person to attend the sick child than those handling the other children it is an ideal situation.

Parents often maintain vehemently that it is impossible to keep a child in bed, and they should be informed that children in hospital wards remain in bed, even though not seriously ill, as they soon get the habit and become adjusted to it. It is very difficult for children to learn to use the bed pan during a short illness, so carrying smaller children to the toilet is usually justified, but bed should be insisted on until the temperature has been normal for one or more days, depending on the nature of the illness. Following febrile illnesses children will convalesce much faster if kept in bed a few extra days. Generally speaking, less bed clothes than usual are required for the febrile child, unless he is having chills. The room temperature should be kept around 73° F., and the air should be fresh, moist, but not cold. A window should be opened moderately, behind a screen or ventilator to avoid drafts, keeping the heat turned on, and either boiling water in the room or hanging wet sheets about to provide moisture.

Certain facts should be borne in mind in connection with diet. In the febrile state the child often loses his appetite completely and serious ketosis and disturbances of mineral and water metabolism occur. Fluids and easily assimilated carbohydrates are essential during the first few days of acute illness, to combat toxemia, dehydration and ketosis, and to promote diuresis. The child will only take the foods that he normally likes very well, but fortunately these are the easily digestible carbohydrates, which are good for him. Salty crackers are desirable, because they promote thirst. In the absence of vomiting, milk is an excellent and well-taken food during febrile states. Skimmed milk is still better, as fats are wisely restricted in the diet. Except in prolonged, wasting illness it is not a good plan to force a child to eat. As soon as the child's appetite returns he may have a full diet, providing there is no gastro-intestinal contraindication.

The usual order to force liquids may be greatly overdone. Seldom is it necessary to administer fluids in any way except by mouth, so long as the urine retains its normal color. An easy method of administering fluids, once the technic is mastered, and much less painful to the child than the subcutaneous route, is the intravenous administration. All apparatus and solutions must be especially prepared for intravenous injections. The output, color and specific gravity of the urine are again the guide as to the amount and rapidity of the injections. At the Cook County Hospital, intraperitoneal administration of fluids in children has been abandoned because of the greater ease and less danger of intravenous drips.

A daily evacuation of the bowels is desirable, and this can be accomplished by a mild laxative such as milk of magnesia, an enema, or a suppository, often depending on the mother's and the child's preference. Seldom, if ever, does a pediatrician use castor oil, calomel, or salts. An enema every other day suffices during an acute illness, as there is not much residue because of the anorexia. Too-frequent enemas to combat fever are both useless and harmful.

A fever that is not unduly high needs no reducing, as it is probably a part of the normal mechanism for combating bacterial invasion. If the fever produces restlessness, loss of appetite, etc., or reaches 104° F. or over, measures should be instituted to reduce it. A rapid tub bath in lukewarm or tepid water is much better than sponging, with far less exposure to the child. Wet tepid flannel packs or jackets about the body, or wet sheet packs, including the arms and legs, are good fever reducers, if kept wet with tepid or cool water. Such packs can be left on until the desired reduction of temperature is obtained. If a convulsion occurs, relaxation can usually be

*Chicago Med. Soc. Bul., March, 1937.

secured in a tepid, *not hot*, tub bath, followed by a wet pack and an ice bag to the head.

Oxygen has a definite place in the treatment of acute febrile diseases in children, and should not be used merely as a last resort, nor should it be used unless an indication exists. Cyanosis, marked dyspnea, or both, are the best indications in children, and the tent method is much less distressing to a child than administration by a nasal catheter.

Intravenous blood transfusions of properly typed and matched blood are at times life-saving procedures. The saphena magna vein, passing medially to the internal malleolus, is easily dissected out for transfusion purposes. This is much more satisfactory than intramuscular injections of unmatched, untyped blood.

Drugs really play a minor rôle in the treatment of acute febrile conditions in children. Seldom are nose drops so important that the child must be held to administer them. At the Cook County Children's Hospital, only very essential medication is ordered for the febrile child and the children get well just as rapidly and completely as those in private practice surrounded by bottles of medicine. Aspirin (acetylsalicylic acid), in proper doses, is relatively harmless and relieves pain and discomfort. Alkalies, such as the citrates, are said to be of value in febrile conditions and can be combined with the aspirin. When stimulants are needed, the best for children are adrenalin (epinephrin), caffeine, aromatic spirits of ammonia, and occasionally whiskey. As sedatives, paregoric, codeine, or barbiturates may be used. Atropine should be avoided in laryngotracheitis, because of its drying effect.

JOSEPH K. CALVIN, M.D.

Chicago, Illinois.

Look for THE LEISURE HOUR among the advertising pages at the back.

Use of the Cystogram in Diagnosing Placenta Previa*

HEMORRHAGE, as a rule, is the first symptom that causes a suspicion of the presence of placenta previa. If the cause of the hemorrhage is obvious, that will rule out placenta previa. The old teaching that painless, apparently causeless bleeding should be diagnosed as placenta previa was adhered to until we could admit the patient to the hospital and, by injecting 50 cc. of 10-percent sodium iodide solution into the urinary bladder, visualize radiologically the pelvis and entire uterus. The plate can be made with the patient in a reclining or erect position.

If there is no evidence of low implantation of the placenta we feel free to handle the case in the usual manner, doing what is considered advisable in the way of making vaginal or rectal examinations. If the roentgenogram shows a low or central implantation, then we should be extremely careful as to examinations.

The interpretation of the x-ray finding depends on the relation of the fetal head to the urinary bladder. The lower uterine segment, in the late stages of pregnancy, is a fibromuscular tube and as a rule contains one pole of the fetus. If the baby is in the lower uterine segment, the head of the baby will rest against the posterosuperior surface of the bladder. The bladder shadow will show as a crescent-shaped mass, and if there is no placenta to prevent, will come up against the head of the baby. If the placenta is in the lower uterine segment it will show as a less opaque mass about 2 cc. thick between the shadow of the head and that of the bladder.

JULIUS MCIVER, M.D.

Dallas, Tex.

*Texas St. J. of M., Nov., 1936.

Ergotamine Tartrate in Psychoses

THE administration of ergotamine tartrate in small doses, orally, to psychotic patients, tends to diminish suicidal, homicidal, and destructive activity. The patients so treated ate better and frequently became more tidy in their toilet habits.

These observations are most interesting when compared with the findings of Lindeman, who observed that after the administration of adrenalin, his subjects appeared to turn their attention into themselves. They became more subjective. Following the use of ergotamine we observe the opposite effect. The possible relation of this altered behavior to the decreased activity of the sympathetic nervous system induced by ergotamine administration suggests that further studies of the action of this drug might cast additional light on the mechanisms of disturbed mental states.—DRS. E. A. BABER and E. B. TIETZ, in *J. of M.* (Cincinnati), Jan., 1937.

Tuberculosis Aphorisms

1.—The basic factor in the treatment of tuberculosis is to destroy the tubercle bacilli, not to curb their activity temporarily. Propagation of the bacilli increases toxemia, which gives rise to fever and metastasis.

2.—Tubercle bacilli are anaerobic and possess great potential vitality and resistance.

3.—The primary infection often remains dormant for many years, when a sudden attack occurs, which means *reactivation*, not reinfection—is endogenous, not exogenous.

4.—The time to begin treatment is at the

earliest reaction of the tuberculin test, in advance of the roentgenographic findings, to protect the child in the incipiency of the disease.

5.—All children proving tuberculin-positive have been infected, and during the process of development the bacilli can be destroyed by surcharging the blood with sodium iodide and resolving dormant foci.

6.—Sodium iodide stimulates the antigenic substances of the blood-serum to increase phagocytosis, destroying tubercle bacilli and mixed infection.

7.—Make the venoclysis of sodium iodide in the right antecubital region, giving from 1 to 20 cc. of a ten-percent solution every four or five days, according to age and condition.

8.—Sodium iodide is isotonic with the blood, and all toxemic cases are deficient in iodine, as shown by actual blood-iodine analysis.

9.—The blood has a marked affinity for sodium iodide, which raises the opsonic index and aids in restoring alkalinity.

10.—The blood must be regenerated before antigenic function can be stimulated.

11.—Sodium iodide is antiseptic, alterative, and resolvent. Given intravenously, it will reach every part of the pathologic lungs within a few seconds. It will not cause hemorrhage, but on the contrary, will prevent it.

12.—The therapeutic value of sodium iodide, given intravenously in pulmonary tuberculosis, is very high, and moderately advanced cases respond quickly. Pneumothorax is of value as an accessory, to slightly immobilize the lung, but not to collapse it.

S. M. JANES, M.D.

St. Petersburg, Fla.

The products we advertise are worthy of your attention. Look them over.

Insulin in Gastro-Intestinal Disturbances

ALTHOUGH insulin has been widely used as an adjuvant in the treatment of the various gastro-intestinal and liver disorders, the exact mechanism of its action in the non-diabetic patient is as yet not clear. It certainly is not a panacea in the treatment of gastro-intestinal disorders, but its judicious use is worth while: (1) when a gain of weight cannot be achieved in other ways; and (2) in cases of uncontrollable vomiting, from whatever cause.

The value of insulin in peptic ulcer is doubtful, although some good results have been reported.

As far as the treatment in liver disease is concerned, opinions differ. However, there is clinical evidence that insulin is helpful in the treatment of parenchymatous liver diseases. One should never forget that diabetic acidosis may cause severe gastro-intestinal symptoms, and here insulin may be a life-saver.—HENRY BAKER, M.D., in *Rev. of Gastro-enterology*, Sept., 1936.

Tannic Acid Treatment of Burns

THE procedure employed in the tannic acid treatment of burns, at the Children's Hospital of Michigan, Detroit, is as follows:

Codeine is ordered upon admission and repeated as indicated.

The burns are thoroughly cleaned, all loose skin and tissue cut away.

The part of the body not burned is rapidly cleaned, using soap and water.

The sterile pack, containing 3 sheets; instruments (tissue forceps, scissors, and hemostat); towels; doctor's and nurse's gowns; and a pair of gloves, is then opened and the patient placed on the sterile sheet.

The necrotic tissue is removed, blebs opened and the area cleansed with saline, boric acid solution, or tincture of green soap and sterile water. The 5 percent tannic acid solution is then sprayed on the burned area.

The child's bed is prepared with a sterile sheet. An electric cradle, covered with a sheet (burn tent), is placed over the patient. The temperature is maintained at 90° F.

The burned areas are sprayed with tannic acid solution every fifteen minutes until a dark-brown, leathery coagulum has been formed (4 to 6 hours).

Tannic acid jelly is applied to burns of the face. The jelly may be substituted for the tannic acid solution, if preferred, in treating body burns. One application is usually sufficient.

The child's hands and feet are restrained.

After-Care

As the coagulum separates at the edges, it is trimmed away.

Following removal of the coagulum, the granulation tissue is kept clean and on a level with the skin edges by exposure to the air, excision, or by the use of a cauterizing agent.

Pinch skin grafts are applied as early as possible to prevent absorption and loss of fluids, to minimize infection, and to reduce the tendency toward contractures.

Following healing, if contractures have developed, physical therapy is instituted. If physical therapy is not sufficient, plastic operations are necessary.

Emphasis

Complete tanning of the burned tissue is necessary.

Great care should be followed in the administration of fluids, as careful study of the blood chemistry of burns has shown that there is a marked loss of the blood chlorides,

and if necessary a special nurse should supervise the administration of fluids, recording the amount administered and the output.

Interstitial and intravenous injections of saline and dextrose solution are necessary in the severe burn case, and are repeated as indicated.

On admission, the patient with a severe burn is typed and blood transfusion resorted to whenever the condition requires such supportive treatment.

A thorough follow-up system and a frequent check on the condition of the patient is desirable, if the best results are to be obtained.

DRS. G. C. PENBERTHY & C. N. WELLER.
Detroit, Mich.

Look for FACTS AND COMMENTS among the advertising pages at the back.

Allantoin

ALLANTOIN, found in excretion of maggots and common to plants, can be prepared commercially. It is stable and nontoxic, and induces healing by stimulating healthy granulations and removing necrotic material.

Treatment is painless, simple, ambulatory, and inexpensive. It acts locally as long as allantoin is in contact with the wound. Overgrowth of granulation tissue can be checked by discontinuing the applications.

Allantoin seems to have the same curative effect on chronic ulcers as the introduction of maggots, and is less troublesome for the physician to administer and less disturbing to the patient than the use of insects.—THEODORE KAPLAN, M.D., in *J. A. M. A.*, Mar. 20, 1937.

Anuria

ANURIA may develop in patients who have only one kidney, with infection of mild degree, especially if a loss of bases and chlorides occurs as a result of vomiting, sweating, or diarrhea.

The intravenous administration of salt solution, in sufficient quantity, may give relief even after ninety-six hours of anuria. Hypertonic salt solution may be necessary, but the use of solutions more concentrated than 10 percent may cause a chill and is contraindicated.

The administration of salt in the form of liquid, such as broth, or as salt tablets, is to be borne in mind in cases in which water and chloride are being lost during excessive sweating, diarrhea, or vomiting.—HOWARD F. ROOT, M.D., in *J. A. M. A.*, Mar. 20, 1937.

Elimination of Pain after Rectal Operations*

COMPARATIVE studies were made with a number of local anesthetics to determine their value in rectal operations, and also their ability to relieve postoperative pain upon local application. The anesthetics studied were: Quinine and urea dihydrochloride; quinine hydrochloride with urethane; Nupercaine; Diothane; Benacol; Anucaine; procaine; tutocain; Vuzin (isooctylhydrocupreine); and Eucupin (isoamylhydrocupreine).

This discussion is limited to a brief presentation of my experience with Eucupin. This compound was used in a concentration of 1:1,000, and combined with 0.5 tutocain in saline solution. Injections of Eucupin solution, 1/10 percent in saline, into rabbits did not cause erythema or sloughs, whereas the same concentration in distilled water did occasionally show sloughing. It was also advised that solutions of Eucupin for infiltration be just sufficiently acid to effect solution. Complete anesthesia lasted from one-half to two hours, but occasionally analgesia persisted for three days.

As a topical application, Eucupin ¾ percent in distilled water, proved of great value in postoperative wounds after fistulectomy, excision of pilonidal sinuses, and hemorrhoidectomy. Patients treated with this drug and also with other applications stated that there was no comparison in the results, and that after Eucupin there was complete relief, sometimes for twelve hours or more. Now all infiltration by these solutions has been abandoned and Eucupin, 0.75 percent in water, by topical application to the open wounds, is used alone. This is usually sufficient. The drug thus topically applied has a great added advantage in its powerful bactericidal action, which causes it to prevent infection in this field, exposed to contamination. Eucupin was applied before the operative anesthesia had worn off. Cotton saturated with the solution was pressed into the wound and allowed to remain for five minutes. Application can be made at 3-hour intervals for four times. More prolonged use is unnecessary.

Eucupin solution may be used safely in the largest amounts. In equal anesthetic concentrations, more than twice as much Eucupin as procaine hydrochloride may be injected subcutaneously into the rabbit. The subcutaneous lethal dose of Eucupin for the rabbit is placed at 150 mg. per kilogram of body weight, when injected as a 1:1,000 solution.

NORMAN J. KILBOURNE, M.D.
Los Angeles, Calif.

*Surg., Gyn., & Obst., Mar., 1936

Public Health and the Press*

NOT long ago (a little over fifteen years), scientists had an attitude of haughty contempt for the press, and the press poked fun at the scientists. The conventional method then for a newspaper reporter to cover an important and serious science meeting was to take a look at the program with its technical titles, wrinkle his brow as a sign of his misunderstanding aloofness from such things, and then return to his office to write a story that laughed at the scientists for being, to him, so incomprehensible.

Today one can hardly pick up a newspaper without finding at least one seriously written story about science. When I first started covering the meetings of the American Public Health Association there was no other coverage except by relatively inexpert local reporters, who covered this important scientific meeting as they would cover a meeting of the D.A.R., simply because the meeting was being held in their own town. Now scientific meetings, wherever they are held, attract galleries of specialized science reporters. These specialized writers even appear on the programs with the scientists.

Public health education can now be done very effectively through the medium of the press, but there are two grave dangers in the use of this medium. The first danger is the reporter who writes a story to make the front page, when he knows the story should not have been used at all, and the other is inaccurate reporting due to ignorance of the subject. That is the danger of the complacent scientist who adopts an attitude of good-natured tolerance toward faulty reporting of science. This is the man who says, "Did you see the write-up of my report in the newspaper this morning? They got it all wrong, but what do you expect of the newspapers?"

Prevention is a key word in public health. I should like to suggest a preventive method for controlling the twin dangers of inaccurate science reporting and over-tolerant scientists. These hazards cannot be averted without the aid of men and women of science. Public health educators, because of their close contact with the public and the press, can be particularly valuable allies in this fight.

The first step in controlling the hazards is to give full, wholehearted cooperation to newspaper writers. Do not be too modest or reticent in telling a reporter about an important discovery, a significant advance in scientific knowledge. Tell him every colorful detail, point out every possible practical application that will go to make a page-one story. Let him see that you have news sense. Then he will gain confidence in your judgment and be more ready to follow your advice about stories that should not be carried.

The second step is to cultivate the same attitude of intolerance for inaccuracies in science reporting that you have for inaccuracies in laboratory tests. Be as vigorous and constant in criticizing inaccurate or objectionable reporting of science as you are in advocating vaccination against smallpox.

JANE STAFFORD
Science Service Medical Writer

*Abstract of a talk presented before the Public Health Education Section, American Public Health Association, New Orleans, Oct. 21, 1936.

State Medicine is poorhouse medicine. Tell your patients.

Antirabic Vaccine in Epilepsy

ONE day in April, 1935, while in the City Laboratory, I heard a man who had brought in a dog's head for examination for possible hydrophobia infection telling the technician that since he took the hydrophobia vaccine five years ago, he had not had a single epileptic attack. He related that he formerly had been subject to typical and frequent seizures of the most severe grand mal type, and on account of this that he could not retain a steady job; and that, five years ago, he had been exposed to hydrophobia and had been given the standard treatment of vaccine, since which time he has had no seizure.

Realizing that the anti-rabies vaccine is made from the desiccated spinal cord of the rabbit, and that epilepsy is a disease of the central nervous system, I wondered if probably the sequence of events in this case might be cause and effect rather than happenings connected in point of time only. I resolved, therefore, to submit the case to a patient whom I had been treating for severe, idiopathic epilepsy.

He was willing to try out its merits, so I gave him the full course of 21 injections, just under the skin of the lower abdomen, in April and May of 1935. *Up until the present he has not had another seizure.* His general health has shown marked improvement, much of the apathetic disposition and the moron-like conversation has disappeared. He has put in a full summer's work on a farm and is an entirely different individual.

I am making this report of this case with the hope that others may see fit to use it, in an effort to find out if it is consistently of value in the treatment of idiopathic epilepsy.—O. E. WRIGHT, M.D., in *South. M. & S.*, Nov., 1936.

THUMBNAIL THERAPEUTICS

Ephedrine in "Colds"

EIGHTY-TWO (82) percent of patients suffering from acute, uncomplicated colds were quickly relieved by capsules containing ⅛ grain (8 mg.) ephedrine sulphate and ⅜ grain (24 mg.) of Amytal, administered at two-hour intervals until relief was experienced. The maximum daily dose was six capsules. Delay in starting the treatment or the presence of complications (fever, sore throat, cough, or laryngitis) lessened the efficiency of the treatment.—Drs. G. H. Gowen and A. J. Nedzel, in *Ill. M. J.*, Feb., 1937.

Pellagra

IN spite of modern studies, pellagra is still a highly important cause of death, especially in the southern states.

Spies, of Cleveland, has been able to reduce the death rate in this disease from 54 percent to 6 percent by a diet high in caloric value and in protein and containing large quantities of yeast, along with the adequate rest, good nursing care, and, in certain cases, large intravenous doses of a potent liver extract.—Editorial, in *J. A. M. A.*, Mar. 20, 1937.

Calcium in Edema of the Larynx

BEFORE resorting to tracheotomy in cases of edema of the larynx, the laryngologist or surgeon should first try giving large doses of calcium intravenously—5 cc. of a 10-percent solution to young children; 10 cc. to older children; 20 to 30 cc. to adults, repeated as required. By this treatment, operations can be avoided in a large percentage of cases.—W. Gaus, M.D., Dusseldorf, Germ., in *Med. Progress* (Manila), Sept., 1936.

Sinus Disease and Its Complications

INFECTIONS of the nasal accessory sinuses, and their complications, should, in most cases, be treated conservatively. Rarely or never should surgical operations be performed in acute cases. We must respect the nasal mucosa. Because of its peculiar anatomy and physiology (with which all physicians should be familiar), we cannot treat it as we do the skin.—Frank J. Novak, Jr., M.D., Chicago, Ill.

Camphor in Breast Engorgement

THE intramuscular (gluteal) injection of 3 grains (0.3 Gm.) of camphor in oil, twice during the first day, with, possibly, one or two half-doses on the succeeding two days, if required, is simpler and more effective in the treatment of engorgement of the lactating breasts than the use of ice bags, binders, fluid restriction, and sedatives.—Milton D. Klein, M.D., in *A. J. Obst. & Gynec.*, May, 1936.

Milk Injections in Alopecia Areata

A NUMBER of cases of alopecia areata of the scalp and bearded regions of the face have apparently been cured by giving 12 or 15 *intradermal* injections of small quantities of sterilized milk, just sufficient to produce one wheal covering the entire patch. Each patch is injected in this manner once a week for 5 or 6 sessions. The resulting new growth of hair gradually becomes stronger and takes on pigment.—A. E. Marcoglou, M.D., in *Arch. Derm. and Syph.*, Jan., 1936

Magnesium Sulphate in Epilepsy

THE daily administration, over long periods, of the largest dose of magnesium sulphate which the patient can take without causing watery stools (this must be ascertained by experiment), along with large quantities of water, resulted in amelioration of the symptoms in 58 percent of cooperative epileptic patients. Diseased kidneys contraindicate this treatment.—A. Wolf, M.D., in *J. Neurol. & Psychopath.*, Jan., 1936.

Hypertonic Dextrose Solution in Circulatory Depression

AS a means for preventing the circulatory depression (fall of blood pressure and rise of pulse rate) which so often occurs during surgical operations, especially in poor-risk cases, the intravenous injection of 100 cc. of a 50-percent solution of dextrose is recommended. It also guards the liver against damage and minimizes acidosis. In the presence of shock or collapse, this should be immediately followed by hypodermoclysis with physiologic saline solution, until blood transfusion can be started.—Drs. H. B. Matthews and V. P. Mazzola, in *Surg., Gyn., & Obstet.*, May, 1936.

THE DOCTOR'S STUDY

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

He that loveth a book will never want a faithful friend, a wholesome counsellor, a cheerful companion, an effectual comforter.—ISAAC BARROW.

American Medicine

AMERICAN MEDICINE. Expert Testimony Out of Court. What Is Wrong—and What Is Right—with American Medicine, *as Freely Set Forth by Leading Doctors and Surgeons, Including Men from Every State. Two Volumes, 1,500 pages. Edited and Published by The American Foundation, 565 Fifth Avenue, New York. Price, $3.50.*

The American Foundation has embodied, in a comprehensive report, the views of leading physicians and surgeons throughout the country on the present status of American medicine and on the problem of making "adequate" medical care available to the large part of the population that now fails to receive it.

The report summarizes the results of an inquiry addressed to medical men, begun by The American Foundation approximately 18 months ago. The doctors—chiefly those that have been in practice twenty years or more—were asked whether they feel that radical change in the present system of medical care is indicated, and, if so, in what directions. There was no questionnaire; the doctors were invited to comment freely upon all relevant points, and they did.

The report makes no recommendations; but, in quotations from thousands of singularly sincere and spontaneous statements, it analyzes profoundly and without reserve the whole structure of American medicine, presenting the whole picture—including, as one doctor puts it, the back of the house as well as the front.

The questions are rather discussed than answered; or rather, for each question, there are various answers. With the alternatives before him, the reader can weigh and choose. While the scope of the report is far too great to be indicated briefly, the following indicate part of the field covered:

What is "adequate" medical care?

Is the cost of it the only reason why it is not generally available?

If it were "available" now to all, would a large part of the population still choose quacks, cults, and patent medicines?

How far is government responsible for the health of the individual?

Who should pay for the medical care of the indigent sick?

Is there too much specialization?

What is the present status of the family doctor—is he "passing"; or is a new version of him just coming into being?

Is the "doctor-patient relation" an obsolete sentimentality, or has it a practical value in modern scientific medicine?

The Medical Advisory Committee for these studies contains a long list of eminent names (134), among them Walter C. Alvarez, of the Mayo Clinic; James R. Arneill, of Denver; Henry A. Christian, of Boston; J. Shelton Horsely, of Richmond, Va.; Ernest E. Irons, of Chicago; Smith Ely Jelliffe, of New York City; John A. Kolmer, of Philadelphia; John H. Musser, of New Orleans; and Surgeon General Thomas Parran, of the U. S. P. H. S. This committee has not *written* the report, but merely endorses it as having been compiled with unbiased integrity and as being a fair summary of the material collected.

The physicians and surgeons who sent

statements (the full list forms an appendix of the report) represent every state, all divisions of medicine, and all types of medical experience. The general practitioner in rural districts has a voice; the specialist in every field; the professor in the teaching hospital; the dean of the medical school; the research director and laboratory worker; the partner in the group clinic; the hospital administrator; the officer of the medical society; the director of public health work.

The report falls roughly into two divisions, as follows:

The first seven sections describe present trends in medical practice and in medical education. They analyze without reserve what is wrong and what is right with American medicine today, answering the questions listed above, and a number of others.

The last four sections discuss various proposals—social and economic as well as medical—for "distributing" medical care and lowering its cost, and for organizing medical care and public health services.

In other words, in the first (and the larger) part of the report the doctors discuss chiefly medicine itself. In the latter part they venture into the field of social and economic theory. The much greater space and emphasis given to the discussion of medicine itself is not without significance. Medical scientists do not see any possibility of separating the social and economic aspects of medical care from the quality of medical care itself, as a dominant and controlling factor in all planning.

Astonishment has been expressed at the tremendous emphasis that falls on medical education in this report. A number of doctors, however, wrote that so long as, in their judgment, so much remains to be done by way of improving medical care and the personnel of the medical profession, they consider discussion of costs and distribution only superficial. Leading educators, and many medical men outside the teaching institutions, express the view that medical education is really the key to the solution of the problem of better medical care for more people.

There is extensive comment on the drift toward specialization and the causes of it—the expanding field of medicine, the public's preference for specialists, the commercial rewards. The reply to the moot question whether there is over-specialization, as one gathers it from these letters, is comparatively simple: There are too many incapable specialists, and not enough good ones.

The question is raised whether the closer organization of hospital staffs and development of their group functioning, and the drawing in of more practitioners into connection with hospital work, may not mean that the real development of the future will be the hospital group, rather than the independent group organization, or the "commercial" group of the present.

State Medicine is discussed extensively, pro and con, and all varieties of health insurance, voluntary and compulsory, are dissected, so that their good and bad points can come to light.

Every physician in the country whose interests do not end at the door of his consulting-room will do well to procure and *study* this report (which is essentially *his own* estimate of the situation, because the voices of men like him are heard in it); then formulate a plan for the future of Medicine and talk it over with his confreres until something is *done about it.*

Many intelligent laymen are going to read this book, and the doctor who is not familiar with its contents is apt to be asked some embarrassing questions.

Gunn: Pharmacology and Therapeutics

AN INTRODUCTION TO PHARMACOLOGY AND THERAPEUTICS. *By J. A. Gunn, M.A., M.D., D.Sc., F.R.C.P., Professor of Pharmacology and Director of the Nuffield Institute for Medical Research, University of Oxford. Fifth Edition. Revised to accord with the British Pharmacopoeia 1932 and the United States Pharmacopoeia 1936. Oxford University Press. London: Humphrey Milford. 1936. Price, $1.75.*

The object of this introduction to pharmacology and therapeutics is to give the medical student a reasoned short account of the scope and matter of the subject; it is intended for reading in the intervals between lectures or during vacations. The 21 short chapters deal with classes of drugs, and with their action on systems of the body and in certain types of diseases. Being an introduction only, it does not dispense with the use of the larger textbooks by those who desire detailed descriptions and discussions.

This (fifth) edition has been revised to accord with the eleventh revision of the United States Pharmacopoeia (1936). This little volume should be found very useful for students beginning the study of the action of drugs, and by teachers of the subject.

Homans: Surgery

A TEXTBOOK OF SURGERY. *By John Homans, M.D., Clinical Professor of Surgery. Compiled from Lectures and Other Writings of Members of the Surgical Department of The Harvard Medical School. Fourth Edition. With a Special Bibliographical Index and with Illustrations by Willard C. Shepard. Springfield, Ill.: Charles C Thomas. 1936. Price, $8.00.*

This text is a compilation, amplification, and coordination of lectures given by members of the surgical department of the Harvard Medical School, and is intended to teach the fundamentals and something of the practice of surgery. It gives a sound basis, not only for general surgery, but also for the various surgical specialties. This (fourth) edition contains a new chapter on amputations and plastic operations. Practically all of the 513 illustrations are drawings (many of which are diagrammatic), intended for instruction ra-

ther than esthetic effect. The bibliographic and subject indexes are unusually complete.

The entire style and spirit of the work is to lay a sound basis of the science, art, and history of surgery, though there is plenty of material on operative technic. It is a good substitute for a course of graduate lectures by trained teachers. The historical introductions to the various chapters are colloquial, and frequently amusing. It is an easy book to read. The fact that four editions have been required in five years, testifies to its popularity and value.

This edition (entirely revised and reset) is no larger than the others, but everywhere obsolete material has been replaced by that which is fresh, so that is strictly up to date in its teachings.

For the student and the general clinician who aspires to increase his surgical skill and practice, and for those who are preparing to take State Board or other examinations, it would be hard to find a better teaching text; even skilled surgeons might well profit by the basic material here so well presented. For a volume of its size (1,265 pages) and importance, the price is very reasonable.

Reid: William S. Thayer

THE LIFE AND CONVICTIONS OF WILLIAM SYDNEY THAYER, PHYSICIAN. *By Edith Gittings Reid. New York: Oxford University Press. 1936. Price, $2.50.*

This is a lifelike pen-portrait (with several pictorial ones) of a great physician and a true gentleman—a successor of Sir William Osler as professor of medicine at Johns Hopkins.

Dr. Thayer was internationally known, respected, and loved, and Mrs. Reid, who knew him well, has told his story in a human and sympathetic manner, supplementing her impressions with extracts from his diaries describing the early years of the Johns Hopkins Hospital and Medical School, and his experiences as a medical officer during the World War. In fact, his passion for writing down his thoughts makes this almost an unconscious autobiography.

No physician can read this record of one of the most worthy members of his profession without being, not merely entertained, but inspired to greater efforts and higher living.

Osman: Bright On Renal Disease

ORIGINAL PAPERS OF RICHARD BRIGHT ON RENAL DISEASE. *Edited by A. Arnold Osman, D.S.C.. F.R.C.P. Oxford University Press, London: Humphrey Milford. 1937. Price, $7.25.*

This reproduction, or rather reprinting, of the original contributions of Richard Bright on renal disease, will especially appeal to cultured physicians who appreciate the classics of the art and practice of medicine. The four papers and five colored plates, dealing with the disease which has made Bright's name famous, are given in extenso.

Apart from the interest of the subject, the volume is a beautiful one, the type work and paper being of the best. As a library item it is well worth its price.

A book of this kind is not, however, for the book-lover alone. It should be a pleasure, and indeed of high instructive value, to every clinician to read and study the methods and observations of master clinicians such as Bright; such study will act as a spur to endeavors to solve some of the still unsettled problems of medicine.

An interesting item is the addendum, given by the Editor, containing the first histologic examination of some of the kidneys upon which Bright made his observations.

Rowlands and Turner: Surgery

THE OPERATIONS OF SURGERY. *By R. P. Rowlands, M.S. Lond., F.R.C.S. Eng., Late Surgeon to Guy's Hospital, Late Lecturer on Surgery to the Medical School; and Philip Turner, B.Sc., M.S. Lond., F.R.C.S. Eng., Consulting Surgeon to Guy's Hospital; Formerly Lecturer on Surgery and Teacher of Operative Surgery to the Medical School. Eighth Edition. Volume II The Abdomen. With 514 Illustrations (4 in color). Baltimore: William Wood & Company. 1937. Price, $10.00.*

The first volume of this large and detailed technical textbook, which is probably the best known British work in its field, was reviewed in this Journal in the September, 1936, issue, on page 469.

This volume deals with operations on the abdomen and the genito-urinary organs of the male and female. The illustrations are instructive and well chosen.

The operating surgeon needs a book like this to keep his technic up to date, and the occasional operator will find it helpful. The volumes may be purchased separately.

Malinowsky and Quater: Carcinoma of Female Genital Organs

CARCINOMA OF FEMALE GENITAL ORGANS. *By M. C. Malinowsky and E. Quater. Translated from the Russian by A. S. Schwartzmann, A.B., M.D. Boston: Bruce Humphries, Inc. 1936. Price, $5.00.*

This is a translation of a Russian work written by the authors, with the assistance of nine collaborators, each of whom contributes a chapter on some phase of the general subject. The anatomy, clinical aspects, and treatment of carcinoma of the female genital organs are dealt with, and there is a chapter on the social aspects of the disabilities caused by the disease.

Although nothing essentially new is presented, yet it is evident that the authors are fully acquainted with the work being done throughout the world and their book sums up the latest and most acceptable views on the topics dealt with; they naturally lean a good deal toward the work of Russian investigators. The chapter by Professor Pojarissky on metastatic carcinoma of the ovaries is especially well written and enlightening.

Incidentally, it may be mentioned that the authors express the opinion that the various

theories regarding the origin of tumors, including carcinoma, may now be reduced to two: their development on the basis of chronic irritation, and their development from embryonal remnants.

This book should be read with interest by clinicians, pathologists and all who are concerned with the cancer problem.

Werner: Endocrinology

ENDOCRINOLOGY. Clinical Application and Treatment. *By August A. Werner, M.D., F.A.C.P., Assistant Professor of Internal Medicine, St. Louis University School of Medicine; Associate Physician, St. Mary's Group of Hospitals; Physician Endocrine Clinic, St. Louis City Hospital. Illustrated with 265 Engravings. Philadelphia: Lea & Febiger. 1937. Price, $8.50.*

Endocrinology is the newest and certainly one of the most interesting and promising divisions of medicine. Its understanding depends on a knowledge of anatomy, histology, embryology, the physiology of the nervous system, especially the autonomic, and of the ductless glands. The opening chapters of this book present these fundamentals, showing their relationship in the maintenance of functional balance and our sense of well-being. Metabolism is explained and applied throughout. The influence of the endocrine glands on basic growth types is fully discussed and the intermediate variations of bodily configuration and development are shown, in words and in highly instructive pictures.

Following the introductory chapters, each gland is considered individually, with illustrations and descriptions of its gross anatomy and histologic structure. The outstanding research in the isolation of hormones, preparation of extracts, and postulation of hormonal substances is presented, with the action of these substances upon animals, birds and human beings. The disturbances in growth and development and the symptoms produced by disordered function are grouped into a syndrome with the history, examination, laboratory work and possibilities for diagnosis of type conditions.

The bookwork on this volume is excellent, and the index reasonably adequate. If any adverse criticism is to be made, it would be of the author's rather rigid therapeutic conservatism. Thoroughly scientific clinical research in this line is, for practical purposes, far in advance of that done in the laboratories, and the limitation of therapeutic suggestions to what has been "accepted by the authorities" is a decided handicap to the active clinician. Nonetheless, this book will be a valuable addition to any medical library.

New Books Received

The following books have been received in this office and will be reviewed in our pages as rapidly as possible.

SOURCE BOOK OF ORTHOPEDICS. *By Edgar M. Bick, M.A., M.D. Baltimore: The Williams & Wilkins Company. 1937. Price, $4.00.*

MEDIZINISCHE PRAXIS SERIES. Volume 23. "Das Kropfproblem." *By Dr. Eugen Bircher. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1937. Price, paper cover, RM 12.—; cloth cover, RM 13—.*

CATARACT. Its Preventive and Medical Treatment for Specialists, General Practitioners and Students. *By A. Edward Davis, A.M., M.D. Philadelphia: F. A. Davis Company. 1937. Price, $3.00.*

CHILD CARE AND TRAINING. *By Marion L. Faegre and John E. Anderson. 4th Edition Revised. Minneapolis: The University of Minnesota Press. 1937. Price, $2.50, Trade Edition; $2.00, Text Edition.*

ALLGEMEINE ELEKTROKARDIOGRAPHIE. *By Prof. Dr. Eberhard Koch. Dresden and Leipzig: Verlag von Theodor Steinkopff. 1937. Price, RM 3.—.*

THE THYROID AND ITS DISEASES. *By J. H. Means, M.D. Philadelphia and London: J. B. Lippincott Company. 1937.*

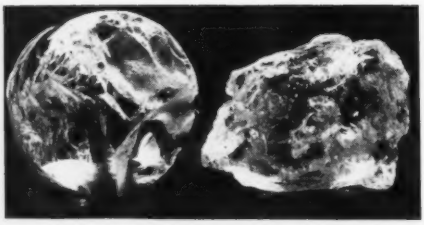
PATHOLOGIE UND THERAPIE DES PERIPHEREN KREISLAUFS. Volume III. "Oeynhausener Arztevereinskurs." *Dresden and Leipzig: Verlag von Theodor Steinkopff. 1937. Price, RM. 7.—.*

POST-MORTEM APPEARANCES. *By Joan M. Ross, M.D., B.S. (Lond.), M.R.C.S., L.R.C.P. With Preface by E. H. Kettle, M.D. 3rd Edition. New York: Oxford University Press. 1937. Price, $2.50.*

DIE ZEHN APPARATUREN DES MENSCHLICHEN ORGANISMUS. Pathogenese, Diagnose und Therapie innerer Krankheiten. *By Prof. Dr. Rudolf Schmidt. Berlin and Wien: Urban & Schwarzenberg. 1937. Price, paper cover, RM 10.50; cloth cover, RM 12.—.*

NATIONAL HEALTH SERIES. *Edited by the National Health Council. Five of twenty volumes, some completely revised, the others published for the first time.* ADOLESCENCE. Educational and Hygienic Problems. *By Maurice A. Bigelow, Ph.D., Sc.D.;* THE EXPECTANT MOTHER AND HER BABY. *By Robert L. DeNormandie, M.D., F.A.C.S.;* WHAT YOU SHOULD KNOW ABOUT EYES. *By Park Lewis, M.D., F.A.C.S.;* THE HEALTHY CHILD. *By Henry L. K. Shaw, M.D.;* THE COMMON HEALTH. Disease Prevention in the Home and Community. *By James A. Tobey, Dr. P.H. New York & London: Funk & Wagnalls Company. 1937. Price, $0.40 per copy; $1.10 for three copies, postpaid.*

MEDICAL NEWS



"Synthetic Quartz"

THIS illustration shows a mass of Du Pont's new thermoplastic resin, Lucite (left), internally fractured, and a like formation of quartz crystal (right), each placed over a source of illumination. From this source light is projected through Corning filtered glasses of red, yellow, green, blue, and violet, into the crystal or plastic mass. Because each of these two materials has the same property of propagating light within itself, and because the internal fractures of the two masses are at various angles, the light is reflected from these interior surfaces in a myriad of angles. This indicates that the plastic seems to have the same structural formation as that of rock quartz crystal, as far as optical qualities are concerned.

A.M.A. Meeting

THE eighty-eighth annual session of the American Medical Association will be held in Atlantic City, New Jersey, June 7 to 11, inclusive, 1937. These meetings are always worth while, even if one did not hear any of the papers read at the various section meetings, because the scientific and commercial exhibits, which will be seen to the greatest advantage in this huge auditorium, if carefully studied, constitute a postgraduate course. Moreover, the meeting with physicians from all over the country is a stimulating experience.

Atlantic City is one of the most famous summer resorts in the world, and will be at its best in June, thus adding the attractions of a refreshing vacation. Every medical man who can possibly do so should be there, and *now* is the time to make hotel reservations.

School of Tuberculosis

THE Trudeau School of Tuberculosis will hold its 23d session from May 17 to June 12, inclusive, at Saranac Lake, N. Y., with a supplementary course from June 14 to 26, at Bellevue Hospital, New York City. There will also be a symposium on silicosis at Saranac Lake, the week beginning June 21. This is a fine opportunity for graduate work in phthisiology.

For full particulars, write to the Secretary of the School, at Saranac Lake.

Opening in North Carolina

IT has come to our attention that there is a good opportunity for a keen general practitioner in a small town in western North Carolina. There is no physician within ten miles. This ought to be a good living, from the start, for a capable man. For further information, write to Mr. R. L. Snyder, P. O. Box 58, Whittier, N. C.

American Heart Association

THE American Heart Association will hold its thirteenth session in the Viking Room, Hotel Haddon Hall, Atlantic City, N. J., on June 7 and 8, 1937, concurrently with the meeting of the American Medical Association. The first day will be devoted to study of the peripheral circulation, and the second to a general program.

Dr. Gregory Passes

WILLIS G. GREGORY, M.D., Ph.G., professor of pharmacy at the University of Buffalo School of Pharmacy since 1886, and dean of the School from 1890 to 1936—the oldest dean in the profession—passed to his rest on March 20, 1937, at the ripe age of 80 years.

Dr. Gregory was widely known for his services to pharmacy, having, among other notable achievements, served as a delegate to the United States Pharmacopeial Convention for five consecutive terms—a record covering more than 40 years.

SEND FOR THIS LITERATURE

To assist you in obtaining new and worthwhile literature on equipment, pharmaceuticals, foods, physicians' supplies, etc., CLINICAL MEDICINE AND SURGERY will gladly forward your requests for such catalogs, booklets, reprints, etc., as are listed from month to month in this department.

MAKE USE OF THIS DEPARTMENT
BOTH LITERATURE AND SERVICE ARE FREE

E- 1 The Pneumonic Lung. Its Physical Signs and Pathology. The Denver Chemical Mfg. Co.

E- 2 Bischoff Pharmaceutical Specialties. Ernst Bischoff Co., Inc.

E- 3 Vera Perles of Sandalwood Compound. The Paul Plessner Co.

E- 4 Taurocol. The Paul Plessner Co.

E- 5 Specific Urethritis—Gonosan "Riedel." Riedel & Co., Inc.

E- 6 Dr. Weirick's Sanitarium. Dr. G. A. Weirick.

E- 8 *Journal of Intravenous Therapy.* Loeser Laboratory.

E- 9 Elixir Bromaurate in the Treatment of Whooping Cough and other Cough Disorders. Report of Cases. (Booklet.) Gold Pharmacal Co.

E-10 Menocrin. The Harrower Lab., Inc.

E-11 Chondroitin; for Treatment of Idiopathic Headache. The Wilson Labs.

E-12 Endothyrin for use in Hypothyroidism, etc. The Harrower Lab., Inc.

E-13 A Few Notes Regarding Psychoanalysis. Fellows Medical Mfg. Co.

E-14 What Constitutes an Ideal Urinary Antiseptic? Cobbe Pharmaceutical Co.

E-15 Cough — Its Symptomatic Treatment. Martin H. Smith Co.

E-16 The Therapeutic Value of Chemical Foods. Fellows Medical Mfg. Co.

E-18 Technic of the Injection Treatment of Hernia. Loeser Laboratory.

E-19 Menstrual Regulation by Symptomatic Treatment. Martin H. Smith Co.

E-20 Hyperol. A Utero-Ovarian Tonic and Corrective. Purdue Frederick Co.

E-20 Gray's Glycerine Tonic Comp. Purdue Frederick Co.

E-22 Feeding Sick Patients. Knox Gelatine Laboratories.

E-23 Danish Ointment. Reprint *J. A. M. A.* Acne Rosacea. The Original 24-Hour Treatment for Scabies. The Tilden Co.

E-25 Clinical Guide for Female Sex Hormone Therapy. Schering Corp.

E-26 An Outstanding Advance in Ulcer Therapy. The Wilson Labs.

E-27 Reducing Diets and Recipes. Knox Gelatine Laboratories.

E-28 Dermatomycol for the Treatment of Skin Diseases Due to Fungi. Ernst Bischoff Company.

E-29 Colloidal Mercury Sulphide-Hille. Hille Laboratories.

E-30 Ludozan—The Longer Lasting Antacid. Schering Corporation.

E-31 Laboratory Tests to Determine the Germicidal Efficiency of the Vapors from the Cresols of Coal Tar. Vapo-Cresolene Company.

E-33 Foot Weakness and Correction for the Physician. The Scholl Mfg. Co., Inc.

E-34 Chart of the Inguinal Region, with Technic for the Treatment of Hernia by Injection. The Farnsworth Labs.

E-35 Alphacatalyst. The Intravenous Treatment for Cancer. The Farnsworth Labs.

E-36 Taurocol Compound with Digestive Ferments. The Paul Plessner Co.

E-37 Treatment of Ring Worm and Epidermophytosis ("Athlete's Foot") with Phenylmercuric Nitrate Ointment. Associated Physicians Labs.

E-38 Protecting the Expectant Mother. Corn Products Sales Co.

E-40 Treatment of Arthritis with Colloidal Sulphur. The Doak Co.

E-41 Oreton—Synthetic Male Sex Hormone. Schering Corp.

E-42 Salicylates Resumé of Therapy. Mallinckrodt Chemical Works.

E-43 Karo Syrup for Infant Feeding. Corn Products Sales Co.

E-44 Appliances for the Mechanical Retention of Hernia. Brooks Appliance Co.

E-46 Vitafer. A Reconstructive Tonic containing Antianemic Factors with Vitamin B. National Drug Company.

E-49 Collene in Gonorrhea. Collene Labs.

E-50 Gestasol. The Follicular and Luteinizing Fractions obtained from Human Placentas. The National Drug Co.

E-51 Formaldehyde for Urinary Antisepsis. Schering & Glatz, Inc.

E-52 Crookes Medicinal Colloids and Pharmaceutical Specialties. Crookes Labs.

E-54 Use of Zinc Borate in Otolaryngology. Hille Laboratories.

E-55 Prontosil (in ampules)—Chemotherapy of Streptococcus Infection. Winthrop Chemical Co., Inc.

E-56 Crookes Phospho-Mandelate. Crookes Laboratories, Inc.

E-57 Iodine Therapy as Practiced Today. Burnham Soluble Iodine Co.

E-58 Betaxin — First Synthetic Vitamin B. Winthrop Chemical Co., Inc.

E-59 Crookes Compound Halibut Oil Ointment. Crookes Laboratories.

E-60 The Newer Knowledge of Ethyl Iodide Therapy. Burnham Soluble Iodine Co.

E-61 Body Chemistry as related to the Endocrine Glands. Reed & Carnrick.

E-62 Bismuth Subsalicylate in the Treatment of Syphilis. Loeser Lab.

E-63 Nephritin—The Standard Treatment for Kidney Disorders. Reed & Carnrick.

E-64 The Effect of Copper on Iron Metabolism in Anemia. Loeser Lab.

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